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Morrow Owners' Review

THE INTERNATIONAL MAGAZINE FOR USERS OF MORROW COMPUTERS
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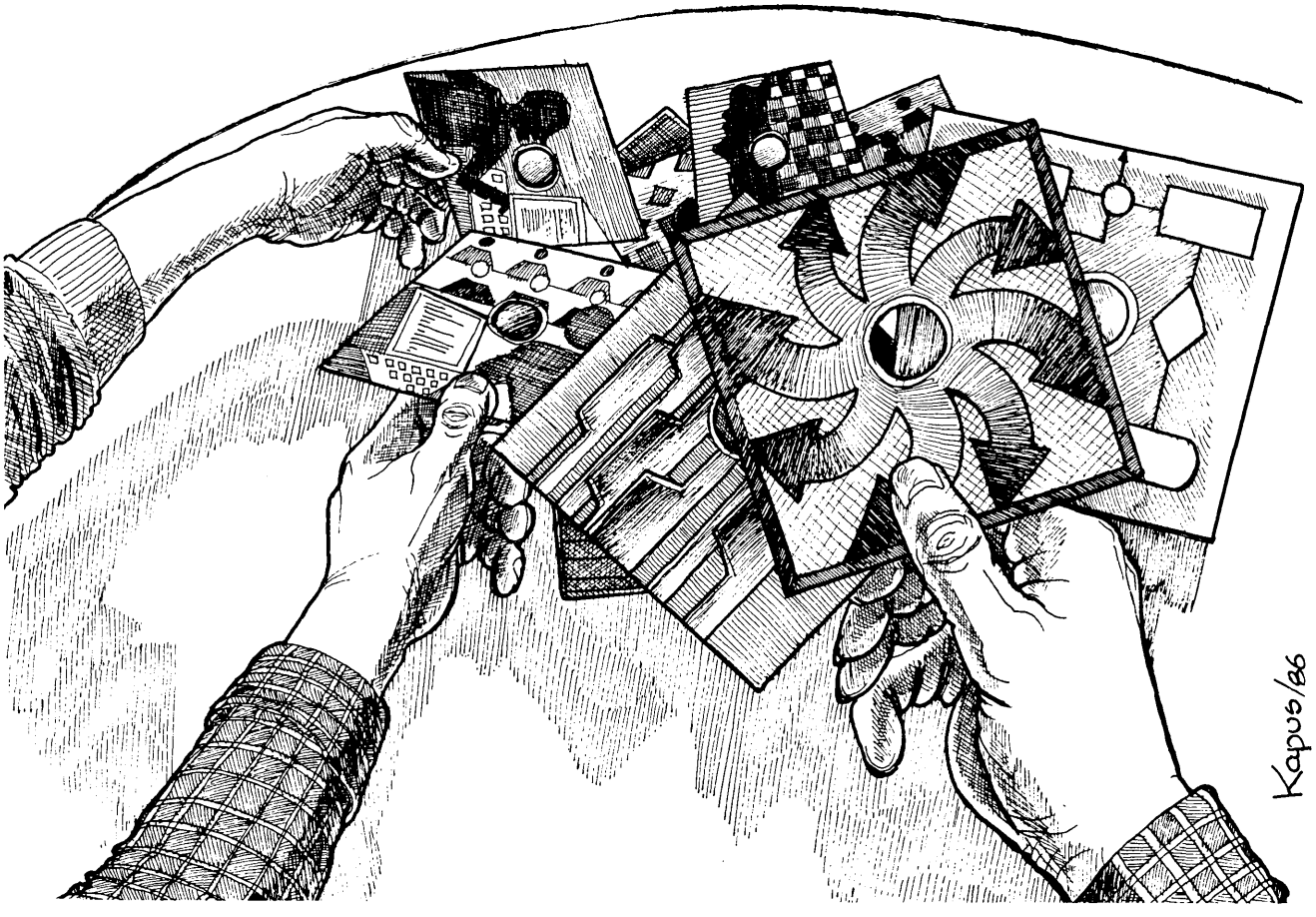
PUBLIC DOMAIN SOFTWARE

Best of PD Software
Problems Using PD Software
Copyright and the Public Domain
Tax Programs for CP/M
New Column on Personal Pearl
And More...



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Editor and Publisher
Sypko Andreae
Managing Editor
Shoshana Tembeck
Administrative Assistant
Dana Gaskin
Graphics
Augusta Lucas-Andreae
Subscription Coordinator
Margo DeMello
Advertising and Layout
Dana Gaskin
Art Direction
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Editorial Council
Andy Adler, Michael Conroy, Tim Evans, Bruce Gowens, Ken Grymala, Clarence Heier, Bill Lamp'l, Brian Leyton, Ted Silveira, Bill Steele, Marilyn Umehara, Lenore Weiss, Erik Westgard

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EDITORIAL

Last December I had an opportunity to travel to Holland, where I grew up, to visit family and friends and find out how my old country had changed over the years. Browsing through bookstores on my recent trip I noticed many new Dutch books that related in one way or another to the trauma of the World War II experience. It seems that every twenty years there is an upsurge of soul-searching on that topic. As I traveled around the country on the excellent Dutch trains--in between family visits and birthday parties--I had a chance to read some of those books and to re-live that time when I was a kid and there was a war on.

The German Army, which occupied Holland during much of the war, controlled the official news media and mixed what little news they let through with heavy doses of propaganda. As a result, we citizens grew extremely hungry for real news.

This hunger and the ingenuity and excitement it bred bears a remarkable resemblance to the craving for information we find today in the personal computer community, and the clever ways we've developed to satisfy that. The underground news networks that spread through Holland remind me in some ways of the Public domain phenomenon today. The big difference is that the Public Domain activity operates above ground and is spurred purely by the desire to solve problems, rather than fear and loathing of an armed enemy.

In the war, we Dutch people listened illegally to the BBC. In response, the Germans jammed the BBC frequencies. When they found this not effective enough, they ordered us to turn over all our radio receivers to them. Although many still listened to BBC broadcasts on hidden radios, most people had to get their news second-hand. A lively word-of-mouth exchange began which spread information amazingly fast. Only a fraction of this could be called real news. Most consisted of rumors, and at least ten new anecdotes circulated every day. It was difficult to sort fact from fiction.

But the Dutch were not satisfied with relying on word-of-mouth news alone. The daring among us began putting this information into print. Underground newspapers proliferated wildly. Their publishers relished printing these under the noses of the Germans and distributing them secretly all over the place. People loved putting out the word and worked for "the good cause" without a cent of compensation, even though they risked arrest and death to do so. These publications were the "Public Domain News" of those days. Some of the underground rags still exist in the form of major Dutch national newspapers.

What was remarkable about our wartime Public Domain news--and what I find similar to our Public Domain software scene today--was the excitement with which it was received, the zeal with which it was passed on and the willingness of most of us to believe it, whether against our better judgement or not. Fresh news of any quality was just too good to pass up, as long as it came from the right people.

Then there was this whole business of the tribal aspect of the wartime news network. Before sharing any of our precious underground information, we had to determine whether people were trustworthy enough to receive it; that is, whether they were in the right tribe. Any person who sympathized in the slightest way with the occupiers--and quite a few did, especially in the beginning of the war--became a danger to the news-relayers and an outcast from our "right" tribe.

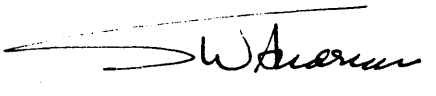
The idea of being part of the tribe fired the imagination of kids like me no end. My older sisters had boyfriends who became more and more deeply involved with the Dutch resistance movement. On rare occasions I would catch a glimpse of these heroes and think: "When I grow up I wanna be...."

Meantime, my friends and I would form little-boy raiding gangs to perform tribal feats of our own. When British warplanes dropped leaflets bearing news from the free world, we would search backyards and climb trees to pluck the last of these from the branches. The Germans threatened arrest or worse for anyone touching the leaflets, but we figured those threats applied mainly to the adults whose war it really was. After collecting these illicit news-sheets, we distributed them to the members of our tribe, the people on the right side who could be trusted not to turn us in. We kids loved to be the bearers of news to the information-hungry crowd. We were good at it, never got caught and it was darned exciting to boot.

Today, I sense that a similar thrill in sharing information drives the Public Domain scene within our tribe of microcomputer users, even though we do not risk arrest in passing PD software on. Still, many of us feel a craving for information, a need to have the latest, and a zeal to share our precious goodies with others not unlike what my Dutch friends and I felt during the war.

Look at MOR. Sharing information between users is what the MOR community is all about. Look how far MOR has come, thanks mainly to the generous energy of its article authors--all volunteers--and the responsiveness of its readers. We are a solid tribe now, like a little David standing up to the big blue Goliath. The members of our tribe are bound by many strings of mutual support and feelings of loyalty toward our faithful Morrow CP/M machines.

This issue is a celebration of the marvelous power of sharing, both within MOR and in the wonderful world of the Public Domain. As you go through these pages and explore the FLOBs, I wish you happy learning and a lot of exciting fun.



LETTERS TO THE EDITOR

THE CASE FOR PEARL

Dear Editor:

This letter is intended for subscribers trying to decide whether or not they can do anything useful with Personal Pearl. Articles in your October/November 1985 issue say "yes" (Gowens, "An Overview of Personal Pearl", pg. 21) and "no" (Butler, "Let's Get Rid of Personal Pearl", pg. 28).

The answer is "yes" here in my law office. In spite of our lack of previous experience with data base programs, we have been able to use Pearl (Rev. 1.05 MD) and our MD3 to devise a billing system resulting in a substantial time savings for me and my secretary.

Using the forms and reports we have designed with Pearl, we enter data from my time-sheets in a one-step operation, facilitated by the use of coded entries and keys programmed with SmartKey II. Pearl sorts the entries by client, arranges the entries chronologically, adds up my total time and multiplies it by the applicable hourly rate. Final editing is done with NewWord. Then billing statements are printed for each client, and a separate cumulative travel report is prepared for later use at tax time.

As an alternative I could have invested more money and purchased a tailor-made law office billing system. I opted to invest some of my time instead. The result is a program meeting our exact needs and capable of modification or adaptation to other purposes as well.

Neil H. McCabe, Chico CA

A QUESTION OF GLITCHES

Dear Editor:

First of all, let us congratulate you on the fine publication you offer to the computer industry. We find it interesting and useful, but we do feel you should check the information it contains since it is probably accepted as dogma by many users.

We refer especially to the item headed "MicroPro May Be Willing to Do a Morrow InfoStar" in the article "Let's Get Rid of Personal Pearl" (Vol. 2, #5, October/November 1985). It states that the current InfoStar will not run on a Morrow.

As we understand it, InfoStar is really a combination pack of DataStar and ReportStar. Not having either, but being of a curious nature and always ready to learn, we borrowed one on a very temporary basis, a copy of the above two programs as sold by MicroPro. The DataStar is release #1.4 and the Report Star is release #1.00.

Recognizing that these were CP/M 2.2 programs, we first decided to try them in our MD3 with ROM revision 2.5 and CP/M revision 2.3. The printer used is a NEC 360 Spinwriter e-1-f. All terminals are MDT60's. We found that after installation and setting up a form definition file, it ran without a single "glitch." This stimulated our curiosity.

We moved to the MD11's (we have two), one with ROM revision 1.9, CP/M 3.0 revision 1.8, the other with ROM revision 1.9, CP/M 3.0 version 2.0. The first computer uses an Epson RX-80 and the other an Epson MX-80. We anticipated problems due to the CP/M 3.0. We "piped" the disk set up on the MD3 to the hard drive of both MD11's, making changes for the different printers in use. Much to our surprise and pleasure DataStar performed perfectly. We then moved to ReportStar and found some problems. We went to the emulation programs provided on the hard drives, i.e. CPM2.RSX and GENCOM (incidentally these are discussed in your same issue in David's Q & A Column) and applied them to the area of problem. Now ReportStar ran without trouble!

To sum up, we were able to run what we believe is InfoStar on one MD3 and two MD11's described above without trouble. We fail to understand what is wrong with the current versions, so we destroyed our copies. Incidentally, the programs were originally purchased as part of a MicroPro 'Demo Pack' and came on eight inch disks in IBM 3740 format. They were transferred to use via modem, thus arriving on a 5 1/4" Morrow formatted floppy.

One other thought, and this we are not attributing to MOR. There is considerable writing being done and appearing in the well-read computer magazines, regarding the need for changing filters on hard drives. The manuals on the Morrow hard drive computers clearly states that their hard drives are hermetically sealed units. Thus no air gets inside the drive. The fan, and its associated filter found on some (not all) Morrow hard drive computers, is intended to furnish convection cooling to the inside of the case of the CPU. None of that air, and we have confirmed this with our local service dealer, gets into the sealed hard drive. We might add that if a filter is present, and is allowed to get extremely dirty, it can reduce the air flow which is used for convection cooling and could (this is only theoretical) be the cause of some of the 'hot' hard drives which owners are talking about, since the reduced flow of air caused by a dirty filter will reduce the designed cooling function.

George L. Miller, Springfield, VA

FANNING THE FLAMES

Dear Editor:

I am one of your early subscribers and I am very pleased with the progress of Morrow Owners' Review. I have three MD11 systems that I use in my business. Overall they have served me well. I did have one "mother board" and one power supply burn out. Morrow replaced these, no questions asked and no questions answered! From reading in MOR, I realize that my problems were probably from overheating. I placed small table fans so that they blow through the cooling slots at the back of the cabinets. Not a pretty solution, but an inexpensive (I already had the fans) and apparently effective solution.

Glenn Maron, Jacksonville, FL

MUTUAL ADMIRATION

Dear Editor:

This is just a note of thanks for the kindness and professionalism with which I was treated when you published my recent article on dBase II ["Running a Small Business with a Morrow," MOR, Oct/Nov 1985, Vol. 2, #5, p. 7]. I couldn't be happier with the way it came out.

I want to congratulate all of you on a publication which is truly useful, not only to Morrow owners, but probably to many other CP/M users as well. You have achieved just the right editorial balance of articles of interest to novices and computer junkies (like me). Your layout is both pleasing and well organized. And, there is now a professional tone, absent from even the slickest magazines.

MOR is sorely needed. I recently asked my dealer about upgrading to an MD11 and he said I would have to wait a minimum of two months to get one. He said Morrow doesn't even return his calls anymore. Now that you are independent, we can all feel a little better knowing MOR will be around, even if Morrow isn't.

Richard Spingarn, Ithaca, NY

"TO LOOSE" TOO LOOSE

Dear Editor:

I am still looking for the article on squeezing files--"How Not to Loose Your Files"--featured on the cover of the Aug/Sept 1985 MOR.

I guess everyone is entitled to make mistakes.

Brian Lowy, Briarwood, NY

[Near the end of an intense production period, our MOR team gets pretty loose. So in spite of all our meticulous page combing, we forgot to proofread the cover! Talking about loose ends. . . --Ed.]

MORE ON PUBLIC DOMAIN SOFTWARE

(Not in this issue)

The articles listed below each contain more than a passing reference to Public Domain software. The references are indicated by (Volume).(issue).(page), for instance: 2.4.32 => MOR Vol. 2, #4, p. 32.

ZCPR3 Makes CP/M 2.2 Shine 1.5.26
MDBITS, a Program to Replace SETBAUD 2.2.20
MEX, a Great PD program 2.2.31
NSWEEP, a PD Jewel 2.4.54
Affordable Computing (Almost) . . . 2.5.40
NSWEEP Revisited 2.6.36
MOR Public Domain Diskettes 2.6.52

It may also be worth your while to leaf through the modem articles in the JUN/JUL 1985 issue (MOR Vol. 2, #3) for information on how to get started with modems and modem software. Once started you will have access to the many Electronic Bulletin Boards (BBS's), most of which have Remote CP/M facilities (RCPM's) which will give you access to vast amounts of Public Domain software.

If you are not a member of a Morrow Users Group (MUG) with an associated library of diskettes with Public Domain software, check out the MOR PD Diskettes. MOR PD is a collection that continually grows, containing all Floppies of the Bi-Month (FLOBs) and several other special subjects. (See p. 44 for info on this issue's FLOB.)The directory of MOR PD, expanded monthly, is available upon written request to MOR, PO Box 5487, Berkeley, CA 94705. Attn: MORPD. Be sure to include a Self Addressed Stamped Envelope (SASE).

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Front cover drawing	-- George Kapus
Front cover design	-- Augusta Lucas-Andreae
Drawings on pp. 16, 32, 34	-- Augusta Lucas-Andreae
Drawing on p. 21	-- George Kapus
Caricature on p. 32	-- Linda Carothers
Editorial Assistance	-- Eleanore Smith
	-- Elizabeth Judd
Layout Assistance	-- Steven Aibel
Morrow Liaison	-- John Seamster
For PropStar program customized for MOR	-- Russell Greenlaw of Civil Computing Corp.

PUBLIC DOMAIN: WHERE DOGS RUN FREE

by Ted Silveira

[An earlier version of this article appeared in Computer Currents.]

If you're old enough, you may remember a TV game show in which the big prize was three minutes in a supermarket with a shopping cart. The winners charged down the aisles, grabbing things indiscriminately--laundry soap, steaks, TV dinners, champagne, dog biscuits. I always thought these people were crazy. Why did they bother with the frozen chow mein? Why didn't they just fill their baskets up with filet mignon?

Then, about three years ago, I hooked my computer up to a modem and dialed a computer bulletin board for the first time. I'd heard that these bulletin boards had some free programs, but when I saw the hundreds of programs on this bulletin board's directory, something snapped. Suddenly, I was rushing down the supermarket aisles, pulling things off the shelves as fast as I could, snatching up the dog biscuits along with the champagne.

Hundreds of dollars in phone bills later, I've calmed down quite a bit. I now scan the bulletin boards with the eye of a connoisseur, and my blood pressure only rises when I run across something new. But while the madness lasted, I collected over 400 CP/M programs, some priceless and others utterly worthless.

What Is Public Domain Software?

Some people love to spend their free time writing programs, driven not by the hope of becoming millionaires, but by the urge to tinker, an odd sense of fun, or a deep-seated streak of insanity. Once done with their programs, these people release them into the public domain. In other words, they say that if you want these programs, you can have them, free--no money changes hands, no licensing agreements need to be signed. You can use the programs, copy them, change them, and pass them around. Some authors hold on to the copyright to keep unethical people from trying to package and sell their programs.

Many public domain programs are utilities, the software equivalent of screwdrivers and pliers. Some of these are for programmers and others who like to poke around inside their machines, but plenty are useful for novices. SD (SuperDirectory), for example, lists the files on your disk in alphabetical order, gives the size of each file, and tells you how much space is left on the disk, all at once. UNERA (UNERAse) can recover a file you accidentally erased. FBAD (FindBAD) checks a disk for bad spots and marks them so your computer won't try to write on them. NSWP (NewSWeeP) copies, renames, and erases batches of files so easily that you'll never bother to struggle with PIP again.

Though utilities make up the single biggest group, you'll also find many other kinds of programs. There are business programs--general ledger, payroll, data base management, and income tax overlays for SUPERCALC and other spreadsheets. There are communications programs--like MDM740, MEX114, IMP, and KERMIT--which let your computer talk to any other computer. There are word-processing aids, like FTNT14, a footnoting program, and WINDEX20, which builds indexes, both for WordStar or NewWord files. There are games, programming languages, weather forecasting programs, perpetual calendars, math and statistics programs, and more. Some big computer bulletin boards carry over 4,000 files.

How Good Is Public Domain Software?

You ask, "How good can free programs be?" They can be very good, but, of course, not all of them are. Some, in fact, should be dumped in the nearest electromagnetic field. This useless group includes programs with bugs that will send your computer off to chase its tail until you hit the reset button. It includes programs that are obsolete and should be decently retired. And it includes programs, new and old, that just don't do anything worth having done. (I once picked up a program that signed on, told me my machine had a Z80 processor, and then signed off.)

Many other public domain programs are genuine bargains. They may be a little slower than their commercial counterparts, or not quite as slick, but they work and they're free. Take BUSINESSMASTER, for example, a complete set of business programs (general ledger, inventory, payroll, and so forth) that was once sold commercially. When the company brought out a new version, they placed the old BUSINESSMASTER in the public domain. It's as good a program as it ever was; it's just not as hot as the newer one.

Finally, some public domain programs are absolutely first class. For communications, public domain programs like MDM740, MEX114, and IMP are better than most commercial programs. In utilities, NEWSWEEP has practically no commercial competition. And Richard

---

Ted Silveira is a freelance writer, contributing editor for Profiles and Computer Currents and on the MOR Editorial Council. He can be reached through the BAMDUA BBS (415/654-3882), the KAY*FOG BBS (415/285-2687), or CompuServe (72135,1447) and is always happy to hear about new public domain software (or lucrative writing jobs!).

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IBMPC-BLUE 1-154 Disksides	$175.00	$435.00
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NATIONAL PUBLIC DOMAIN SOFTWARE
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1-800-621-5640 wait for tone, dial 782542

AM EX VISA

Conn's ZCPR3 and SYSLIB are a programmer's treasure chest--two massive sets of programs, complete with very detailed manuals.

All public domain programs, good and bad, come with the same warning, though--when you use them, you're on your own. If a program suddenly crashes, taking your last six hours of work with it, it's your problem. You may be able to get help by talking to a friendly programmer or by leaving a message on a bulletin board, but there's no 800 number to call for technical support, bug fixes, updates, or refunds. (Then again, that's been true of some commercial programs, hasn't it?)

How Do You Get Public Domain Software?

One excellent way to get these programs is to call computer bulletin boards, many of which have hundreds (even thousands) of programs available. I get most of my programs this way, using a modem and a communications program to transfer them directly from the bulletin board to a disk in my computer. This method has two big advantages. First, you can get the very latest programs from the bulletin boards, often months before you can get them anywhere else. Second, you don't have to worry about finding the programs in a disk format that suits your Morrow.

Of course, the bulletin boards have disadvantages, too. To hook your computer to the telephone line, you need a modem, which can cost from $60 to $600. You need a communications program, like MDM740, that can use the XMODEM protocol for transferring files. And you have to pay the phone bill, which can run quite high if you do a lot of long distance calling.

Another very good way to get public domain programs, especially if you're just starting out, is through a local computer users' group. Most have built up a library of public domain programs which members (and sometimes non-members) can copy. Usually there is no charge except the price of the disk if you didn't bring your own.

A third way is to get your public domain software by mail order. MOR offers its Floppy of the Bi-Month, and some Morrow users' groups, such as BAMDUA (Bay Area Micro Decision Users Association), will let you join up and then order disks from their library by mail. You have to pay a fee to cover postage, handling, and the cost of the disk, of course, but the prices are reasonable. (MOR Public Domain (PD) Diskettes, which include the FLOBs of each issue as well as some special PD diskettes can be ordered for $8 by mail. See p. 44 for MOR PD Order Forms).

A fourth way to get public domain programs is to contact one of the national CP/M users' groups. Both CP/MUG (CP/M Users' Group) and SIG/M (Special Interest Group for Microcomputers) have huge libraries and print catalogs, from which you can order as many disks as you want. But there are disadvantages to this method, too. By the time the catalog gets to you, the programs are usually well over six months old--a long time in computer circles. Both groups charge you for copying, shipping, and the price of the disk itself (CP/MUG $13-17 and SIG/M $6). CP/MUG carries only KayPro, NorthStar, Apple CP/M, and 8" single-sided, single-density disks, while SIG/M carries just the 8" disks. And both groups sell programs only by the disk. So even if you just want one program from a particular disk listed in the catalog, you have to buy the whole disk.

Finally, in various computer magazines, you'll find ads for a few commercial operations that handle public domain software. These usually carry a greater variety of disk formats than CP/MUG and SIG/M, although they may charge more. For example, Workman Associates charges $32.50 a disk, but they sift out most of the junk, so you get more good programs on each disk than you do from CP/MUG or SIG/M.

Sources

Bay Area Micro Decision Users Association (BAMDUA)
P.O. Box 5152
Berkeley, CA 94705

The CP/M Users Group (CP/MUG)
1651 Third Avenue
New York, NY 10028
Catalog $10.00

The Special Interest Group for Microcomputers (SIG/M)
Box 97
Iselin, NJ 08830
Catalog $2.00

Workman & Associates
112 Marion Avenue
Pasadena, CA 91106
(818) 796-4401
Catalog free on request

BEST OF THE PUBLIC DOMAIN

by Tim Evans

[Most public domain programs will run on MD2 and MD3 (the "floppy" systems) as well as MD11 (and other hard-disk systems like the MD5,16,34), but a few won't run properly on an MD hard-disk machine. Notably, communication programs come in different versions for floppy and hard-disk systems. --Ed.]

One important word before we get into the best of the public domain: The names of the programs listed here are generic names. When you go looking around for them, you'll find them under names that will vary a bit, and you'll have to use your imagination. For example, many will be abbreviated in some way and most will have numbers in the filenames. The latter signifies the version number.

Life Savers

Every--repeat, every--computer owner should have and use these invaluable-but-free programs. Someday, one of them will save your life. Read on and find out what I mean.

FINDBAD.COM Checks a diskette for bad sectors, then locks them out. This prevents your computer from trying to store data in the bad sectors. Works properly only under CP/M 2.2 (floppy systems). Some later versions may work under CP/M 3.0 but on the floppy of a hard-disk machine only. Use cheap diskettes without fear; use diskettes sold as single sided (SSDD) as if they were double sided (DSDD). [SSDD and DSDD disks are really the same thing, except for price and slightly higher risk of a bad sector on the normally "unused" side of the SSDD disk. Most experienced users agree that using SSDD disks as DSDD is safe enough, and the price difference is well worth it. --Ed.]

UNERASE.COM "Un-erases" a file you've mistakenly erased from your diskette. Tell it the name of the file and it will go hunt for it; if you haven't stored anything else on the diskette, there's a great chance you'll get your file back. How much is this worth to you when you reclaim a file representing hours of work? Older versions will only work properly under CP/M 2.2.

Your Computer and Ma Bell

Using your Morrow to communicate with other computers over telephone lines is a snap with public domain software. Watch it, though: MD floppy systems and MD hard-disk machines need their own version, because of the different port addresses used for the serial ports connecting modem with computer. In addition to one of the following programs, you'll need special "overlay" files to customize your communications program to your computer.

MDMxxx.COM (where xxx stands for a version number like 730 or 740; latest version is MDM740) The old faithful CP/M communications program. Easy to use for anything from CompuServe to MCI Mail to swapping (public domain) files by phone with your friends to computer bulletin boards to mainframes. **MODEM7** is an old and now obsolete precursor. MDMxxx has been around so long that it's bug-free.

MEX.COM (latest version MEX114) Modem Executive. Automates many communications tasks. MEX users keep an active nationwide system of information-packed "newsletters" alive; you'll find them on computer bulletin boards.

IMP.COM (latest version IMP244) "Intelligent Modem Program." Handles the new 2400-bps modems and "YMODEM" protocols. Optionally uses 1 kb packets rather than the customary 128 byte packets which speeds up file transfers considerably. Makes use of the functions keys on your terminal. Automatically "steps down" transmission speed (on 2400-baud Smartmodems) if phone line quality is bad. If you know how to use MDMxxx, you know how to use this one. The Latest.

[On the FLOB/FEB86 (see page 44) are several ready-to-run .COM files for both floppy and hard-disk machines, along with the documentation containing instructions on how to operate them. At a later time, MOR will publish PD diskettes with those special "overlay" files and instructions on how to customize your chosen communication program. Each of the above three programs is complete in itself. Which one to choose is largely a matter of taste. --Ed.]

Screwdrivers and Monkeywrenches

Once you venture outside the Morrow Menus, you'll find your life will be easier if you have a "tool box" with some of the "utility" programs below. And you don't need to be a hacker to use them. Many of these are essential if you're going to get into communications.

SQ.COM Compresses a file so it takes up less space on your diskette. Good for your archive diskettes because you can get more "Squozed" files on them. Also essential if you're using your computer to transfer (public domain) files by telephone: a squeezed file takes less time to transfer--and if you're using long-distance, this means money as well as

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Member of MOR's Editorial Council and President of BaltiMUG, **Tim Evans** lives in Baltimore. He is a produced playwright and Producer of the Baltimore Playwrights' Festival. To pay for all this, he writes legislation for the Social Security Administration.

time. SQ.COM is especially effective with text files; not with .COM files, because they don't have much unused (squeezable) space in them.

USQ.COM Un-squeezes a file squoze by SQ.COM.

NULU.COM "Library Utility." Groups a bunch of files into a single file that takes up less diskette space than the total space required for the individual files. Also reverses the process. Most computer bulletin boards put related files, including the instructions for using them, into Libraries; you need this tool to get them out. NULU.COM has built into it most of the functions of NEWSWEEP (see below), unlike its now obsolete precursor **LU.COM.**

D.COM, SD.COM Two of numerous directory programs which give you more information about the contents of a diskette than CP/M's DIR. Provide alphabetized directories, show file sizes, space remaining, file attributes, more. [See p. 10 for more on SD.]

NCAT.COM, YANC.COM Two of a multitude of "catalog" utilities. Use them to create master catalogs (on diskette, paper) of all of the files on all of your diskettes, then automatically update your catalog to keep it current. Some allow descriptions of your files along with the filenames.

QUIKKEY.COM Public domain program similar to SmartKey (tm). Works properly only under CP/M 2.2 (floppy systems). Stores previously defined sequences of keystrokes (words, phrases, commands, etc.) in the back of your computer's mind for instant recall at the touch of a key or two. Zap your name, address, and phone number into a document with one keystroke. Latest versions work with WordStar/NewWord.

The Swiss Army Knife

So far, we've been talking about utility programs that do one thing. Put the following multi-purpose program in your tool kit, then call yourself a handyman.

NEWSWEEP.COM This may become your most-used program. Squeeze or unsqueeze one file or ten, copy, erase, rename, check the size of file(s) or the space left on a diskette, read or print a text file, even if it's squoze. See MOR, August/September 1985 (Vol. 2, #4, p. 54) for more information about Dave Rand's magnificent little 12K program; then copy it onto every diskette you own.

Souped-Up WordStar

Cuss WordStar all you want, but its widespread use has spawned a virtual cottage industry of add-on's; many of them are in the public domain. And some will work with NewWord. Most work on the principle that you insert special "flag" characters in your document, then

THE 10-MINUTE 1040

TAXWORKS™ Your Fastest, Easiest Tax Preparation Program

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You'll save money if you're now using a service bureau. And instead of waiting for pickups and deliveries, you can run a return in 10 minutes at any time of day . . . or night. If you now prepare returns manually, TAXWORKS will turn out more returns in less time, with greater accuracy . . . and a lot less aggravation!

EQUIPMENT REQUIRED
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FEDERAL: 1040, A, B, C, D, E, G, W, SE, ES, 2106, 2210, 2441, 3903, 3468, 4562, 4797, 6251.

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NO TURNAROUND TIME
TAXWORKS gives you fast, accurate personal federal and California returns when and where you need them. Imagine what this will mean in April: you'll handle last-minute returns and changes on-time. You'll file fewer extensions and corrections. Your clients will get faster refunds.

- Complete Returns on Your Own Personal Computer — No Waiting Time!
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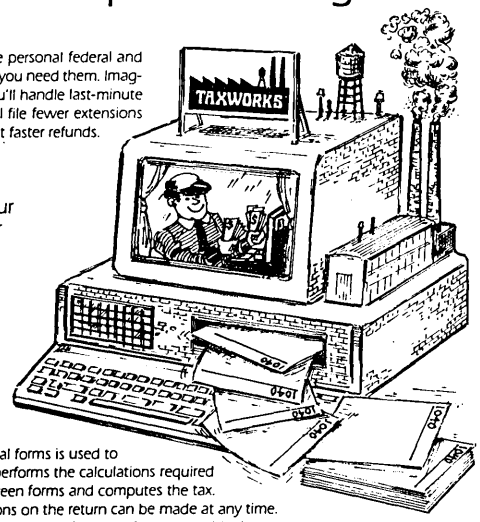

SIMPLE TO OPERATE
A screen format similar to the official forms is used to enter tax data. The program then performs the calculations required on each form, transfers totals between forms and computes the tax. Corrections and last minute additions on the return can be made at any time. The completed tax return can be printed on official tax forms or on blank paper for xeroxing with plastic overlays included with the program.

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run the program to search for and do something to whatever you've flagged in the document.

INDEX.COM Construct an alphabetized index, with page numbers, for a WordStar document.

FOOTNOTE.COM Put footnotes, properly numbered and formatted, at the foot of pages in WordStar documents.

OUTLINE.COM Make a formal outline (i.e., with regular indentations) out of your document.

WCOUNT.COM Counts the words or lines in a document.

PAIR.COM Spots unpaired control sequences in your documents. How many times have you found out you forgot to turn off underlining only when you went to print your document?

WordStar/NewWord to Go

Speaking of WordStar, those durned WordStar (and NewWord) documents won't work with other word processors (or with CP/M's TYPE command or with NEWSWEEP) because they've got funny (but invisible) characters in them. Documents created by other word processors may not work with WordStar/NewWord. What do you do?

PURETEXT.COM, FILTER.COM Remove the control characters, "soft" carriage returns and spaces, other funny characters, and dot commands from a WordStar/NewWord document and make it into a "pure" ASCII file, readable in virtually any other word processor--provided, of course, you can put the file on a diskette the other computer can read.

ENSOFT.COM, WSDOCON.COM, PW2WS.COM These reverse the "filter" process of the above programs, making documents created by other word processors usable with WordStar/NewWord.

The Kitchen Sink

Hate CP/M and its silly rules? Try **ZCPR** or **XCCP**, both of which are complete replacement operating systems. Want a forty-page list of computer bulletin boards with verified phone numbers and information about the systems? Try **PDSE-xxx.LST**, available on almost any bulletin board. Want the great grand-parent of all computer games? Try **ADVENTUR.COM.** (See "Adventure Strategies" on p. 21 in this issue.) Like dBase II but can't figure out how to get your data back out in the form you want it? RCPM's around the country are full of public domain add-on's for dBase. How about a whole public domain database program that's more powerful in many ways than Personal Pearl -- and easier to use to boot? Try **PC-File.**

If all this isn't enough, how about loan amortization programs, financial planning programs, checkbook programs, income tax templates for your spreadsheet program, accounting programs, decision-support programs, PERT-type programs for planning and tracking complex jobs, printer-control programs that will make your dot-matrix printer do all its tricks, including patting its head, rubbing its stomach, and printing dirty pictures. How about programs that will look up a zipcode or area code for you, let you use your computer to type an envelope, plot the orbit of the space shuttle, tell you on what day of the week the Battle of Hastings took place, do multiple-regression analyses, or keep the family recipe file? They're all in the public domain. Enjoy.

KEEPING ORGANIZED

by Ken Grymala

When I first got my MD2, I remember thinking to myself how organized it would help me be. I'd have a diskette for each program, a data diskette for each particular topic, and lots of logically named files. The diskettes would be much easier to keep track of than the hundreds of loose papers cluttering my office.

Well, it didn't take long and I had dozens of diskettes. Then we got an MD11. Keeping track of files and software really began to be a problem. Luckily I had joined the Morrow Users Group of Washington (MUGW) and found out about this great thing they called their "PUBLIC DOMAIN LIBRARY." In it were hundreds of wonderful (and free) programs.

Each of the three public domain programs I am about to describe will work with any of the Morrow MD series of computers, or any other computer running CP/M 2.2 or CP/M 3.0. **BISHOW** allows you to read a document directly from CP/M. **SuperDirectory** provides all kinds of features related to disk directories. **YANC** is a disk cataloging data base program. When these three programs are used singly or together, they provide a simple to use but very powerful method of keeping track of anything from a few diskettes to thousands of files.

Ken Grymala is a free-lance electrical engineer. He and his wife Lynda use an MD2 and an MD11 in their small business to prepare technical manuals, training materials, reports, special software, and magazine articles. They also use the computers for business record keeping and accounting.

BISHOW

BISHOW is a short program that allows you to "view" a document. Unlike the TYPE program that is part of CP/M, or even the VIEW function of programs like NSWEEP, this program allows you to move at your pace, forward or backward through a document.

I renamed BISHOW.COM to "V.COM" so that it would be like the "view" function in many other programs. Now whenever I'm in CP/M, all I have to do is type **V** followed by the name of the document I want to read.

BISHOW allows you to move forward and backward a line or a screen at a time. The BISHOW commands are shown in Table 1.

```
RETURN KEY          = MOVE AHEAD ONE LINE
SPACE BAR           = MOVE AHEAD ONE SCREEN
MINUS SIGN ("-")    = MOVE ONE LINE BACK
"B" KEY             = MOVE BACK ONE SCREEN
"?" KEY             = HELP
CTRL C OR "Q" KEY   = QUIT (RETURN TO TO CP/M)
```

BISHOW Commands
Table 1

One of the best parts of BISHOW is that it never locks up the system the way other TYPE or VIEW programs do when they encounter a strange command or control code. If the file you wish to read is unreadable, it just prints a few lines of gibberish on the screen, but it doesn't hang up. A "Q" or a ^C will immediately get you back to CP/M.

BISHOW is one of those programs whose author is unknown. If you know who wrote BISHOW, please extend my thanks.

SuperDirectory

SuperDirectory (SD), is just that. SD-77.COM and SD-V.COM allow you to get and create all kinds of disk directory information that would otherwise take several programs and a lot of work when compared to the CP/M commands you would have to use instead.

SD-77 lists files in four sets of horizontal columns in a format similar to CP/M's DIR. SD-V lists the files in a single vertical column.

I renamed SD-77.COM to D.COM and I renamed SD-V.COM to DV.COM. [Caution: There is at least one other Directory program called D.COM, so don't try to give the same name if there are others around. --Ed.] In the simplest mode, if I just type a D and a carriage return, I get a directory, in alpha-numeric order for that drive and user area. It would be equal to using "STAT *.*" in CP/M 2.2 or "DIR *.* [FULL]" in CP/M 3.0. That is, the program lists the file names, file sizes, the total of the file sizes shown, and the disk space remaining on the diskette or in the user area.

But that's just the beginning of what you can do with SuperDirectory. By adding a space, a $ and one or more modifier letters to the D or DV, SuperDirectory will allow you to to get any of the information shown in Table 2. It can be used from any drive or user area.

After the A> of CP/M, enter: **D $m**, where **m** is one or more of the following modifiers (A, C, etc.)

A - Display directories of all user areas 0 - 15.
C - Clear screen before displaying.
D - Display directories for all active drives A - E.
Note: This feature doesn't work very well on Morrow MD series computer because of the Morrow virtual drive feature. After it finishes drive B, it resets the disk to virtual drive C, then D, and then E. Each time it goes to the next virtual drive, it gives you the same directory as you received on Drive B.
F - Produces a disk directory file called DISKMENU.DIR. This disk directory can be edited using a word processing program such as NewWord or WordStar.
L - Lists normal directory plus the contents of libraries
N - No pagination, keeps scrolling if more than one full screen.
P - Printer option - prints directory on printer
R - Reset disk (good for CP/M 2.2 which doesn't)
S - Shows system files (good for CP/M 3.0)
V - Shows date, version number
Un - Display contents of User Area "n." For instance, if n=8, then provide directories for user area 8. If used with with the "A" option, then provide all user areas equal to or greater than "n"

SuperDirectory Options
Table 2

Besides providing quick information about disk contents, one of the best features of SuperDirectory is the file that you can generate called DISKMENU.DIR. This file will contain any directory information that you may have requested as described above. It may then be edited with WordStar or NewWord. Listing 1 is a sample of a vertical SuperDirectory for my MD2 Correct-It disk. The comments were added using NewWord in the non-document mode.

```
>> DRIVE:B  USER:0  FILES:8
    SPACE USED:164K  (22K FREE) <<

B0: -CORRECT.302   0K  YANC disk identifier
B0: AUXDICT .TXT   2K  Auxiliary Dictionary
B0: CORRECT .COM  22K  Correct-It main program
B0: DICT    .BIN  92K  Main Dictionary
B0: DICTEDIT.COM  20K  For updating master
                       dictionary
B0: DINDEX  .BIN   2K  Dictionary Index
B0: DISKMENU.DIR   2K  This directory document
B0: IXUP    .COM  24K  Interactive correcting
                       editor
```

Vertical SuperDirectory with Added Comments
Listing 1

YANC

If you have dozens of diskettes and/or a hard disk full of files, YANC will help make your life easier.

YANC, which stands for Yet ANother Catalog program, lets you maintain a master directory of all of your other diskettes on just one diskette. You may then use this master directory to display or print individual diskette directories, as well as for obtaining specific directories by category, e.g. "*.LTR" files.

YANC was originally written by Mr. Ken Presser, and has been modified by many others. YANC is fully menu driven and contains the best of other public domain catalog programs, plus extras. It even includes a very well written help section that can be called up from within the program at any time. The version I am describing, and the one that is on the MOR Floppy of the Bi-Month (FLOB/FEB86, see p. 44) is version 1.83, last updated by Mr. Paul M. Stittler in May 1984.

YANC works by creating a Master Catalog disk data file called MAST.CAT. YANC also puts an identifier on each diskette that has been cataloged. If you refer to Listing 1, used in the SuperDirectory example above, you will note the YANC identifier "-CORRECT.302." The dash, which is forced by YANC, puts the disk name at the beginning of an alpha-numerically arranged directory. That leaves up to seven characters for the identifying disk name you choose, and three extension characters. The three extension characters become the disk serial number and must be numeric in the range of 000 to 999.

The master catalog that YANC produces includes disk names and serial numbers, individual file names, the user area of the individual files, the size of each file, and the space remaining on the cataloged diskette. YANC allows you to produce a number of different reports, on the screen or on a printer, based on this information.

If you have more than about 25 diskettes, I feel it is best to come up with a logical plan for organizing your diskettes. YANC tracks by using the three digit number that you assign to each diskette. The name you give each disk is mainly for your benefit.

You could just begin by assigning all your diskettes a number from 000 to 999 and storing them in numerical order, but I know that wouldn't work for me. I have enough diskettes and files that I have three Master Catalog disks. I have mine organized as shown in Table 3.

I have mine arranged this way because this is basically how my diskettes are stored. It also keeps my data files to a manageable number. As you begin to get to around 750 files (that's about 30 diskettes for me) in MAST.CAT, there is a noticeable slowdown in adding new diskettes.

DISKETTE AND CONTENTS	SER. NOS.
Master Catalog #1	000 to 299
Original Diskettes	
MD-2 Software	000 to 049
MD-11 Software	050 to 099
General Purpose Originals	100 to 299
Master Catalog #2	300 to 699
Working/Backup Program Diskettes	
MD-2 Only	300 to 399
MD-11 Only	400 to 499
General	500 to 699
Master Catalog #3	
Data Diskettes	700 to 999

Sample Master Catalog Breakdown
Table 3

After a diskette has been cataloged, I write the catalog name and number on the diskette label. This makes it easy to identify without having to put it in the computer. If you forget to label it, the catalog name and serial number will show up whenever you do a directory of the diskette contents.

After your diskettes have been cataloged, YANC allows you to list or print the files by serial number, by name and/or extension, or you may list the entire catalog. When looking for files or disks you may also use standard wild cards (* and ?).

YANC is the best public domain cataloging program I've seen, and it works very well for me. However, if someone should decide to update YANC (the C source code is included in the YANC library), it sure would be nice if it had just a couple of additional features. I would like to have the ability to make a short comment about each disk, and have this comment placed in MAST.CAT. I would then like to have the ability to list these comments, along with just the diskette names and serial numbers, in alpha-numeric name order or in serial number order.

Conclusion

The three programs I've described all help to keep my computer files organized, and they work very well for me. In my opinion, BISHOW and SuperDirectory are without equal in either commercial form or in the public domain. YANC is also a very solid and usable tool. Used together, these programs provide features that are not even available in commercial software. The closest rival I know of is Eureka (see software review in MOR, Vol 2, #4, AUG/SEPT 1985, p. 45). But even if I had Eureka, I'd still be using BISHOW and SuperDirectory many times each day. ◘

[Of course everyone is entitled to their own taste, and you may not agree with the preferences of this or that author. If you have strong feelings about which PD Programs you think are best, write about them and send it to MOR. --Ed.]

PROBLEMS WITH PUBLIC DOMAIN SOFTWARE

by Steven A. Wartofsky

I write this hoping I will not bring a curse down upon my head from all the wonderful people who have spent many hours writing, testing, and (hopefully) documenting the software which they have placed in the public domain.

Though there is spectacular software available in the public domain, there are also some horrors; I can think of one program that was sent to some public bulletin board systems which, when run, re-formatted the bulletin board's floppy or hard-disk. Careless sysops lost entire systems, collections of software and time because of that one. Fortunately, this type of software is rare, so you most likely won't run into such problems yourself. You're more likely to be annoyed either by software that is useless--the 47th new "super" directory program that tells you just what the previous 46 did -- or software whose documentation tells you it will perform miracles, and then proceeds to do nothing so well as crash your computer system. Contained here are some hints on what to do with the latter.

One of the "limitations" of free software is that what you get is what you have to work with; rarely do the people who write free programs offer extended support, answers to questions not resolved in the documentation, or fixes of bugs in the program. (There are exceptions, particularly in the field of communications software, where people like Irv Hoff and Ron Fowler have responded to pleas for help, bugs in their programs, and users' questions in a way which puts most commercial software companies and distributors to shame; but they are unusual.) The result is that you are left three solutions to any problems you may have with a piece of public domain (hereafter referred to as "PD") software: 1) Fix it yourself, which may involve learning a bit about the obscurities of assembly language, computer languages, and your computer's ways of dealing with its peripherals; 2) Find someone who knows enough and has enough time on their hands to fix it for you; or 3) Press Reset and go back to the familiar territory of the software you're used to working with. Since most people know how to do 3, this article will deal with 1 and 2.

What kinds of problems are you likely to encounter when you first venture into the realm of PD? One of the most common hangups in PD software derives from the almost endless variety of terminals, and ways of addressing terminals, in the world of CP/M. Fortunately, as a Morrow user one can be pretty sure that if software works on, say, the Freedom 50--one of the early Morrow terminals--it will probably work the same way on the MDT-60 and MDT-70, since all of them have the same basic set of commands which affect the screen. But most PD software is not written initially for Morrows; it's either written specifically for another brand--Kaypro, Osborne, even Radio Shack --or is written to work on, for instance, "ADM-3A compatible terminals." You probably know from your experience with commercial software that some time is involved, either on your part or on the part of the dealer, in configuring software for your terminal and printer. With PD software, not only will the stuff most likely not be installed for your Morrow, but it will be set up specifically for another CP/M system, often with few instructions about the specifics of that setup.

Does this mean, then, that you can only use Morrow-specific PD software? No. There are a couple of ways the PD community has addressed the compatibility question. The most common way to avoid problems of configuration is to write a program that uses the terminal and printer as simply as possible; most of the popular utilities, like NewSweep, DU, etc. go this route. No highlighting, special screen-writing routines, writing to specific areas on the screen, nor special printing features, are implemented in this kind of software. The logic behind this is that the users who write and use PD software don't need to have their terminals light up like Christmas trees to feel they've got a good piece of software on hand; if it does what it's supposed to do, that's quite enough.

But many people, including those conversant in the details of programming, like an interesting screen, and/or want to be able to use all the printing features they paid good money for. And many PD games seek to emulate the action/arcade qualities found in software for game computers, which involves quite a bit of maneuvering for CP/M systems, like the Morrow, which don't use video boards to "map" the pixels on the screen. (Apple, IBM, Commodore and Atari computers all use a board of memory whose manipulation turns on and off the dots on the screen; Morrow and other CP/M computers send a number for each letter out the serial port, which the terminal then "interprets" and prints as a letter on the screen. To use a crude analogy, the Morrow terminal is to the daisy wheel printer what an IBM terminal is to the dot-matrix printer, in the way each "prints" to the screen.) Some PD programs, then, have sections of code where terminal and/or printer routines are set up to use all the features of a particular piece of hardware.

Steven Wartofsky, a PhD candidate in American Literature at UC Berkeley, learned a lot about his computer in order to prevent its kidnapping his dissertation at an inopportune moment. So far he has succeeded.

For instance, you might find a series of "escape" sequences in a BASIC program like JETSIM (**PRINT CHR$(27)+"*"** means "send an escape-asterisk to the terminal"; on Morrows this will clear the screen) which print items at specific places on the screen, or highlight different parts of the screen in different ways, or update parts of the screen as the program runs. Obviously, if the program is written for a Xerox computer, when your Morrow sees, say, **escape-^** in a program--which we'll assume here means "turn highlighting on" for the Xerox--it will do something wierd to your terminal--turn on xon/xoff handshaking out the printer port, or something similarly arcane. Instead of a pretty screen, you'll get at best a well-mixed letter-salad, at worst a locked terminal. The solution is to edit the BASIC file so that it will send out the right escape or control characters at the right time.

Which brings us to another problem: there's a good chance your BASIC program, for the sake of compactness and speed, will not have REM (remark or comment) lines explaining what each terminal-control sequence does. In this case you have to guess, or experiment by changing the **escape-^** to, say, **escape-G-D** (turns highlighting on for Morrows) and seeing what happens when you run the program. (A moldy jellybean to all programmers who forget to include information on how their program uses the terminal and printer.) A seasoned PD software enthusiast will recognize the part of the program where the terminal/printer routines are and eventually be able to reconfigure them; but someone who knows nothing about BASIC will simply have to throw hands up or settle in for an uncomfortable read through the BASIC manual (or call out for help--we'll get to that in a moment).

To make things seem even worse, you're likely to find some PD programs which exist only as .COM files--say, IGLOO.COM or SUPERBASE.COM--with little or no documentation, and no source code. This leaves you not knowing what the program does or how you can get it to work with your terminal. If you have neither the source code nor explicit instructions about debugging the .COM file, you probably have to forget it. However, if you know what to look for to make the necessary alterations, you can use a PD debugger to find and change a specific string of characters. For instance, you could use such a debugger to search for the sequence **ESC G D** in the program--the Morrow terminal instruction to turn highlighting on. Once you've found it, you'd sort of know where and what the terminal-control routines are and could fiddle with them. But this isn't much fun unless you <u>really</u> know what you're doing, and even then it's an <u>ugly</u> chore).

Your best bet in getting a .COM file to work on your terminal is to get hold of the source code. That is the text of a program, written in some computer language (e.g., BASIC, PASCAL, C, or Assembly Language). Using an assembler or compiler, you can turn the text file into a file--such as NSWEEP.COM--you can run by typing its name, NSWEEP. You can find source codes through most users groups or RCP/M's.
(continued)

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Assuming you know something about assembly language or programming, your next step would be to edit that source code and recompile it.

You can probably see by now that to be most efficient in the world of PD, you'll need to learn something about computer languages, assembly language, debugging, etc. If you don't want to do that, there's still hope: first, programmers are getting much better about documenting their code and providing the means for configuration. (Some PD programs written in and compiled by Turbo Pascal actually include a free, program-specific installation program, for instance.) The ideal general solution here would be a booklet or text file, up on PD exchange systems, which includes all known terminal and printer control sequences for all CP/M micros, so translation from one to another could be more transparent.

Secondly, computer bulletin boards and Remote CP/M systems (used to exchange PD software by modem) often have on-line some very helpful and knowledgeable people who will respond to questions and messages and will fix things for you, if you're nice about it. [The SBBS system (415-654-3882) set up by the Bay Area Micro Decision Users Group (BAMDUA) is a model bulletin board in this respect.] The trick here is that they'll help when they have the time to, and only with what they know; if you want immediate, on-demand help with PD software, you'd better learn a bit about how to fix things on your own. MOR is also a bastion of support in cases where you can't find help otherwise; if 100 letters come in complaining about some problem in NewSweep, chances are good someone floating around will try to figure things out and send in a piece on how to fix it--Dave Block's articles on quieting drives, articles on WordStar patches, etc. are examples of fixes that have developed in the past. ■

DEBUGGING: OVERCOMING BASIC FEAR

by Gordon Northrup

One thing we learn as infants is to feel helpless and scared in the face of unknown technology, such as a toaster. Otherwise we may get a large shock or a loud rebuke. These neurotic fears are not necessary, as shown in these three beginner examples.

My mistake was getting the "Monstrous Startrek Disk" CPMUG.022 (from Public Domain Copying Company, 33 Gold St., NYC 10038). I could have as easily gotten an ordinary Startrek such as CPMUG.003, or, probably best for a beginner like myself, The Free Software Handbook and its disks (from Peopletalk Associates, PO Box 863652, Plano, TX 75086). When I finally got the huge file started, and tried to get "OUT" of the "Enterprise's Computer," it hung up. I felt helpless, daunted, and to tell the truth, scared to touch the program because I know almost no BASIC. But when I reset the program it told me the trouble had been on line 2580. So with reckless (that is, counterphobic, which means pretending I wasn't frightened) impulse I called it up on NewWord, forgetting at first to use the non-document mode. So far, so good. It looked right: **2580 INPUT"PROGRAM NAME";B$,** just the right place. But I needed all the tranquil industry I could manage in order to figure out what the program was doing and to believe that the line of code just a few lines down, **2660 ON IGOTO2670,2910,2980,3040,2580,3100,** was somehow ordering jumps that directed the program to the right responses for various inputs. All seemed OK except that "2580" again, which would cycle back to the trouble spot when I inputted "OUT." So (take a deep breath) I deleted it--and the program worked!

After that, the next bug was easy. When I tried to "DOCK" the Enterprise, the program reset, telling me the problem was line **3500 E1=I7:S3=I8:T4[9:L1=J1.** I truly have no idea what that means. But if you look at it with an undaunted eye, it's obvious that **[** doesn't belong, and when you replace it with the most likely guess, which is =I, then the program works.

DECISION.BAS was something else. It hung up so badly that I could't reset and had to reboot, so it didn't direct me to the trouble spot. After forgetting to make it a nondocument, I found in the program the last line it printed on the screen before hanging up ("Hit Space Bar..."). The next line after some printing instructions was **128 WAIT 0, 1, 1.** I looked up WAIT in the Users's Guide to MBasic. After an incomprehensible explanation, it concluded "It is possible to enter an infinite loop...," which had a poetic similarity to what had happened to me. I changed it to 0, 0, 1 without success, and finally just deleted the whole line. I don't know if it's working correctly, but it does work now.

As Franklin Roosevelt might have said, "All you have to fear is fear itself, providing you've made a backup file." ■

Gordon Northrup is a child psychiatrist and the editor of a new journal entitled Residential Treatment for Children and Youth -- which activities unfortunately don't leave much time for fooling around on his MD3 (ROM 2.5).

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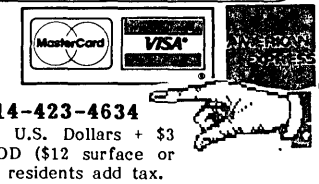

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OF COPYRIGHTS AND "PUBLIC DOMAIN"

by Bill Steele

Whether you're writing software for profit or for public domain distribution--or even if you're just a user--you should understand a bit about how copyright protection works.

Although it is often used as a verb, the word "copyright" is officially a noun, literally meaning "right to copy." It refers to the right of ownership you hold for anything you have created--a computer program, a short story, a painting, a song or whatever.

Under the latest version of the Copyright Act, which went into effect January 1, 1978, your ownership rights are established by federal law from the moment your work is "fixed in a medium of expression," i.e., written down, recorded or, in this case, written to a disk file. There are, however, certain steps you must take to secure and maintain your rights.

The most important step in protecting your copyright is to "claim" it. You do this by placing a copyright notice on the work. The notice should be on all printed copies and in every disk file. (In the case of sound recordings, it goes on the label or container; it's also not a bad idea to do this with disks.) A typical copyright notice looks like this:

Copyright (c) 1985
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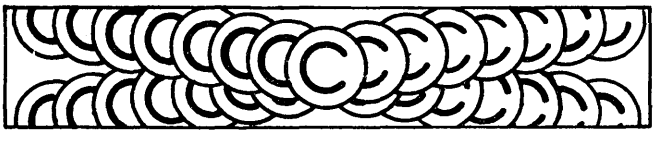
All Rights Reserved

The copyright symbol, a "c" in a circle, insures protection under the International Copyright Convention, a treaty covering most, but not all, the nations of the world. On a typewriter or computer screen, a "c" in parentheses seems to be acceptable. Another copyright treaty among Latin American nations requires the statement "All Rights Reserved." (If you want to be really thorough, add "Todas Derechas Reservadas.") The word "copyright" is not required, but it is usually included in case someone might be ignorant of the meaning of the international symbol. The old copyright law specified exactly where the notice should be placed on each type of work; now the requirement is simply that it be prominently displayed. In a computer program it generally appears as part of the sign-on and it should be included in remarks in the source code.

The purpose of the notice is to inform anyone who might want to use the material that you are claiming ownership. The law holds that if the notice is not there, the material may be assumed to be "dedicated to the public," and thus--here it comes--"in the public domain." Public domain is an antiquated concept dating from a time when few works were published for profit. Tradition nowadays suggests that if you want to dedicate your work to the public you should write "Dedicated to the Public" on it. But the old way survives in law and we're stuck with it.

After you claim the copyright, the next step in securing your rights is to register that claim by sending two good copies of the work, along with the proper forms and ten dollars, to the United States Copyright Office, Library of Congress, Washington, DC 20559. You can write to the Copyright Office for the forms and further instructions. Because of the fee, most people simply put a copyright notice on everything they do; they don't register the claim unless the material is ready to go on the market. If you think a particular work is valuable, it pays to spend the money, because your legal position is not as good if you register your claim after an infringement has begun.

Under the old law, copyright endured for 26 years, renewable for another 26. Under the new law, it lasts for the life of the author (or the youngest co-author), plus 50 years. After that, the work passes into the public domain. The point of the longer term is to provide an incentive to create original works by guaranteeing a reward for the creators and their heirs, it is also intended to insure that no one selfishly withholds a work from public use forever.



During the term of a copyright, you can decide whether or not to let someone else reproduce your work. If someone wants to reproduce it for their own profit, you can ask for a share of that profit in return for your permission. Usually you ask for royalties based on a percentage of sales, but it's also possible to sell a copyright as a piece of property. You may also sell pieces of the right. For instance, you might grant "First North American serial rights," which means you give someone permission to publish your work in a magazine before anyone else does, but only once and only on this continent. You retain all other rights of ownership.

A copyright owner also retains the right to control revisions. You may not, for instance, add

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Bill Steele works in Ithaca, New York as a freelance writer, specializing in science, medicine and technology. He is a member of the MOR Editorial Council and also writes the Mailbox column for MOR.

features to someone else's program and claim your own copyright on the result; it still belongs to the original author. If your improvements are substantial and produce a much more valuable program, you can usually make a deal with the author to share ownership of the new product.

I have heard people claim that they are not violating the copyright law by distributing copies of something as long as they don't make a profit. This is wrong. The definition of infringement is not that you make money, but that the copyright owner loses money. If by giving away a copy of a program, you cause someone not to buy it, you are taking money out of the author's pocket.

It is especially important for those who use and distribute other's material to understand how copyright works. If you leave the copyright notice off something, you may be endangering the owner's rights! This is because the existence of a copy of the work with no notice on it may be used as a defense in a lawsuit for copyright infringement.

Suppose someone donates a program to your computer club. To make it fit in the newletter you delete all the remarks, including the copyright notice. A software company picks up a copy, decides it's a great program, compiles it and sells it, giving no credit or royalties to the author. The author sues, but may lose in court when the pirate produces a copy of your newsletter. "I'm innocent," the pirate says. "I had no way of knowing it was not in public domain." It is not enough simply to slap on any old copyright notice. If the notice is not of the correct form it may also injure the author's rights--e.g., you might have the date wrong, or the rights might belong to a corporation rather than an individual. Take the time to contact the owner--the law requires written permission anyway--and get the correct information.

It should be noted that much "public domain" software is not really in the public domain. Much of it does carry copyright notices, with permission to distribute through computer users' groups added. It is important that people who handle such material understand the law. Playing a game with your own property without understanding the rules is stupid; playing that way with someone else's property goes beyond stupid to contemptible; and often it is also illegal. ■

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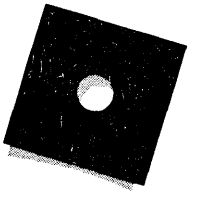

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PUBLIC DOMAIN GAMES ON THE MORROW

by Lawrence Jay Dessner

For many computer users, just using the machine is joy enough. When the household finances have been done and redone, when the business data and reports and the bulk mailings have been printed, what excuse can we find to remain seated before our lovely little screens? Answer: We can examine the latest PD games. Even failed attempts at figuring out how to run them may be more fun than watching television.

I concede that not all the hours I have devoted to PD games have been hours of enjoyment. After all, PD games software is produced for love rather than money and given away rather than sold. PD games often have no user's manual, no screen of directions, nor any REMARK lines in their source code to let one know the object of the game, the cursor movement system being used, the terminal for which the program has been installed, or what unguessable command allows you to QUIT without turning off your computer. (NOTE: Control C almost always stops a MBASIC program, and can't hurt others.) Because the name of a computer file can be changed by any user, one can rarely be sure that the game of SINBAD.BAS you are trying to "play" is indeed the same game, much less the same version of the same game, that your friends in Tucson tell you affords their gang such pleasure. And because a line of program code can be as easily "improved," the user cannot be sure that the comment lines at the top of the MBASIC code or what he can read on the right when he runs DDT on the COM file, describes with any accuracy what is about to happen on the screen.

Despite all that, some PD game software works perfectly well. **POKER.BAS** asks for a number to seed the random generator, asks you who goes first, gives you a $250.00 nut. Then you see what cards have been dealt and how your opponent responds to your bets and raises. Meanwhile POKER.BAS is keeping track of all the cards in the deck as well as of the cash balances, yours and the dealer's. You get to draw up to three cards. If you ask for more you are gently reminded of the rules. When your three jacks beats a pair of sevens, that fact appears with a BELL, two rows of asterisks, and a notice of the growth of your bank account. When, after strenuous betting, your four Kings bring you asterisks, BELL, and $175.00, you may well quiver with ecstasy or at least sigh with contentment. (The experienced PD gamester will not hurry to make copies of POKER.BAS for his intimates before more exhaustive trials. This may save a friend from learning, after his nut has been reduced to less than the next hand's ante, that POKER.BAS thinks that when a pair of eights meets his pair of queens the result is a draw.)

But much of the time POKER.BAS is fun--for those who forgive it its foibles. Like other MBASIC programs, it is easily configured for your terminal codes. It was probably written on an Osborne which uses the same codes as my MDT-20. If you've got it running on your Morrow, it has probably already been configured correctly for you.

Bearing in mind that the names of computer games which float though the PD world are as changeable as the weather, you might be amused by some of the following:

NIM You and the computer take turns removing as many pieces as you choose from any one of the seven rows displayed on the screen. Last one who can play, wins. We played this in grammar school, the paper hidden under textbooks.

ORACLE Type in any question beginning with Who, What, etc, and the program's random generator produces a number which in turn selects a numbered answer. Sometimes the answers are very funny, sometimes very true (especially if the players are in the right mood). This game can be easily customized so that answers include references that you and yours find especially amusing. But when you pass along a copy of this new version, what will the new owners think!

BUG Roll the dice to get another body part for your cootie. You don't actually roll anything. All you do is read the screen and answer Y or N to the question: Do you want to see how your cooties are coming. Note: Many BASIC programs were written before upper and lower case type was the norm. So play it safe and keep your CAPS LOCK on. And if it says type N, and that doesn't work, try NO.

FISHING (**CHASE** is similar) You move your man ($), one step at a time across a field containing obstacles(+ = #), in search of fish(*). Primitive arcade games.

KING You are asked to set four national economic priorities having to do with acreage allotted to particular usages. The machine then tells you, with an overdeveloped sense of its own comedic powers, how the economy and the populace like the result.

CRAPS Just like the dice game.

BACCRRT Ditto. ("Do you understand the rules?" asks this one. Reply in the negative and you get,

---

Larry Dessner is a Professor of English at the University of Toledo where he specializes in Victorian Literature and Creative Writing. He has been processing words with his MD-2 for three years and has not yet got over the bliss of revising without retyping.

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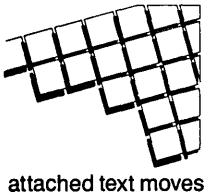

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"Tough Luck." Do you want to play with the fellow who wrote this program?

LUNAR The physics of landing a rocket ship on the moon. Fuel allowances, velocity, etc. I think this one is too hard for ordinary folk, too simple for engineers.

MELTDOWN Simulates an atomic reactor. Cf. LUNAR

STARTREK 24K of listable MBASIC, an elaborate and carefully written program. You command the Enterprise, navigating, firing, calculating energy requirements, position, warp factors, and the like. The results of your machinations appear on the screen in the form of brisk verbal reports in the lingo of Dr. Spock and company. There is plenty of opportunity for elaborate mathematical calculation here, the code is fast, the quips plentiful if not guaranteed to please every armchair strategist. The game is said to be habit-forming by legions of enthusiasts.

BLAKFRIM "Black Friday," a stock market game. You and your competitor(s) buy and sell from the fictional stocks listed. Dividends are declared. News flashes appear. Your portfolio is updated annually. If you think winning is everything, this may be your game.

PGA4 Watch the dice decide how good a golfer you are. Choice of clubs, choice of golf courses, but such impressive refinements do not keep it from being another game in which you are told how the dice fell.

PLAYBACK Type in the sequence of digits the machine has just shown you. The sequence gets longer. Your memory fails you. You get tired, or fascinated, or bored.

MONOPOLY Untested. This 28K program rolls the dice, keeps extensive accounts of money and property, adds up rents, etc., but you need players willing to gather around a computer and to surrender the physical contact with pieces and play money. And what if it crashes after several hours of play and who owns what is lost? Some of us won't give it that chance. Will you be able to forgive it if you do?

BLACKJCK Deals the cards and keeps accounts, and provides a minimal form of company. From time to time your companion vanishes; "syntax error" he says and is no more. I hope you don't miss him.

MASTERMND Like the board game except that there are 10 variables, not five or six, for the five slots. This means, I think, that good guessing as well as hard thinking is required. After twelve guesses the program says, "You lose, Dummy." (Bastard!) You can change the program--just two lines does it--so that you can get as many guesses as you like. When you win, the program gives you only a bald and sullen "You win." This one may beguile you.

HANGMN-3 Neatly done version of a word game similar to MASTERMND. Guess what letters are in the hidden word. You get just enough guesses to make you think hard. Remarkably few E's in the secret words.

Not all PD games are in MBASIC, which is probably not fast enough for any of the versions of PACMAN on CP/M machines. Neither am I. Without joysticks and color and sound, the miracle is that it works at all rather than that it works well. (Here's a case where the ATARI game machine is a clear winner.)

OTHELLO Often called, I think, by a Japanese name which is on the tip of my tongue. Capture your opponents pieces by surrounding them on the eight by eight grid. You can have or give away an initial advantage. A game of skill. Control of corners and sides is a key. Fascinating and obsessing. Persevere and you will win some. Recommended.

TTT Three Dimensional Tic-Tac-Toe. If you have TTT.ASM on the same disk, type that to get the instructions and see the assembly language code for this program. Breathtaking to non-hackers. Cursor is moved with function keys on MDT-20. X marks the spot. Control-C exits. Seems to work as it should.

WUMPUS A classic, I hear. My version offers the instructions and then says it doesn't have them. From what little I can make of the game without them, I don't want them.

ADVENT A free version of the adventures in words games, which abound in the commercial market and a reasonable introduction to the genre. Some high cleverness and memorable wit, but opinions vary widely, don't they. You tell the program what to do, where to go, and if his limited vocabulary permits, he obeys and reports. You save damsels in distress, or amass pirate treasure, but the real prize is discovering the ingenuity and wit of the programmer--and your own. Hard to imagine such games existing without computers. [See Mark Carrel's "Adventure Strategies" on p. 21 for more on this one. --Ed.]

CHESS A very early (1979) FORTRAN implementation of the ancient game. Unless you can keep a chessboard in your mind, you'll need to supplement the program's coded board positions with real pieces on a real board. Other chess programs, some for other hardware, put a replica of the board on the screen and have more than this fellow's two levels of play. And some run much faster. This one might get one started, and intrigued. Whether it will satisfy depends on one's tolerance for inconvenience and one's need to have the state-of-the-art. This is both a marvelous and a largely obsolete program.

Some of these PD games I've looked at here, and certainly others as well, disprove the adage that you get what you pay for. Give them a shot. You have nothing to lose but your leisure. ■

[Some of the games discussed in this article are available on FLOB/DEC85 (see p. 52, Vol. 2, #6) and on FLOB/FEB86 (see p. 44 in this issue). --Ed.]

ADVENTURE STRATEGIES

by Mark D. Carrel

"Adventure" is one of the most complex and interesting PD games available to Morrow owners. Like many of the commercial adventure games, in PD adventure, the player finds his way through twisting underground passageways and mazes and around or over insurmountable obstacles, having to avoid concealed traps and battle myuthical creatures on the way to gaining glorious treasure or ignominious death. The adventure begins in earnest only once you are inside the huge cave. And, though you are not told where the hidden entrance is, you will stumble across it if you simply wander around a little (and stay out of the woods!). I want to justify the staggering amount of time I've spent down in the cave by passing on some of the strategies and rules of thumb I've discovered--not to diminish the pleasure you'll get from discovering actual solutions yourself but to enhance your ability to find those solutions.

Trial and Error

Perhaps trial and error sounds more like desperation then strategy, but in Adventure it is very good strategy. When you first venture into the cave, you know nothing about it except that there are treasures and gold inside and that SOME WHO ENTER ARE NEVER SEEN AGAIN! Faced with a larcenous pirate, a greedy troll, and a scarce supply of obvious weapons or tools, you often have to experiment with a variety of remedies to find the correct solution to a problem.

As you explore deeper into the cave and as you try different solutions, you'll find that the cave (and your guide) has a personality. The more you learn about this personality the easier it will be to predict solutions or formulate methods for discovering solutions. One aspect of the cave's personality is its decidedly sneaky nature. For example, the cave requires some absurd actions to overcome the first two obstacles you are likely to encounter. Thereafter, it begins to demand more reasonable, if not easier solutions, hoping that you'll waste your time by continuing to try absurd solutions.

The best way to work around this subtle deceptiveness is to think through each action carefully before applying it as a solution. If you are reasonably sure throwing dragons' teeth at the ogre is a bad idea, don't do it until you've tried everything else first. If you do throw the dragons' teeth and it proves unexpectedly fatal, refuse your guide's offer of reincarnation. You'll come back as an explorer without his lantern, fall in a pit, and die all over again. It's better to write off your losses and start over, knowing to leave the teeth well enough alone.

Moving About

When you begin, you're told how to move about in a N,S,W,E, up-down, in-out manner. This works well for getting around in open spaces but is only of limited value when wandering around twisting underground passageways. Unable to see more than one room ahead at a time, it is easy to get disoriented and begin to wander around aimlessly.

You can avoid doing this by creating a map as you travel from room to room. Because the cave is full of

---

Mark D. Carrel has a Masters degree in Latin American Studies from Stanford and is now a technical writer in Seattle. When he wasn't using his Morrow to write his Masters paper, he claims he spent too much time reaching the "advanced explorer" level playing adventure. (30234 - 24th Avenue South West, Federal Way, WA 98023)

passageways leading in all directions, it is impossible to actually draw a map for the whole cave. I have found that the best solution is to create a map on a separate sheet of paper for each room, describing the room's various exits and the rooms and passageways they lead to. (See Figure 1.)

MAP FOR THE SWISS CHEESE ROOM

West to Two Pit Room

East to Soft Room

Northeast to Complex Junction

Northwest to Oriental Room (sometimes)

Figure 1

So that you don't have to hunt through a pile of loose maps, you should keep related rooms next to each other. For example, the above map for the Swiss Cheese Room would be filed together with the maps for the Two Pit Room, the Soft Room, the Complex Junction, and the Oriental Room.

Notice that Northwest from the Swiss Cheese Room leads to the Oriental Room only sometimes. This is because, in a few rooms, there are two passageways leading in the same direction. Generally, when you move in a direction and are told,

"You have crawled around in some little holes and wound up in the main passageway"

you can assume that there is another passageway in that same direction that does lead somewhere. Though it may take as many as ten attempts, keep trying and eventually you will get somewhere worth getting to.

Mapping is somewhat different if you enter a maze. Most of the passageways look the same, so instead of mapping from room to room, map from direction to direction on one (large) sheet of paper. (See figure 2.)

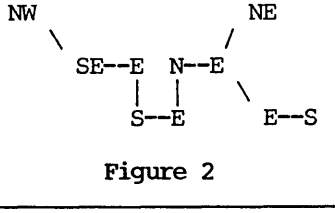

Figure 2

If you have accidentally wandered into a maze (start to worry anytime you enter a room full of twisting passages or intricate tunnels), the opposite direction won't get you out. The passageways twist too much and it takes some exploring to find the way out. The quick way out is to use the "back" command; it will get you out of almost any room you've just entered.

And, no matter how carefully you map, it's worthwhile to accept any hints your guide may choose to offer you. Consider the 20 point charge a part of the cost of trial and error. The hint may be somewhat cryptic but, if you've been exploring long enough, you'll have developed a feel for how the cave works and shouldn't have too much trouble figuring it out.

Finally, there are expressways inside the cave in the form of magic words which will pop you from one place to another in a flash. Finding the first magic word will be easy but the others will be progressively more difficult. Some of these words stand out and others do not and some of the words which do stand out do nothing at all. The only way you can judge the word's value is by your guide's response when you use the word. If the response is "Huh??," that means that the word is a dud. On the other hand, each magic word has a special location(s) where it works, and if the response is "nothing happens," then you know you've got a bona fide useful word but haven't yet found the right place to use it. Of course, if you are in the right place, you'll know it the minute you say the word.

Treasure Hunting

Well, this is what you, the pirate, and the troll are really interested in, right? Treasure's pretty easy to recognize when you come across it--your guide will end his description with an exclamation point. But, if you're still not sure, just wait. If neither the pirate nor the troll (both former IRS auditors) will take it, you can bet that it's not treasure.

Getting to the treasures is, of course, the whole point in exploring the cave. Though they are never really hidden, they are often in hard to reach places. After the first treasure, you'll find that the others are always beyond some obstacle (a passageway you can't reach, a lake you can't cross, a fierce snake, etc.). This is really the only clue that treasures lie in a certain direction, and anytime you find an obstacle it is worth your time to find a way around it.

Once you get a treasure, you must protect it from the pirate. Even though you can carry between seven and eleven objects at a time, you are always at risk of being ambushed and losing it all. Therefore it's best to grab a few treasures quickly and then hide them before going further. Using your maps, you'll want to plan the quickest route to a few treasures close by each other, collect them, and then get them to a hiding place. The safest place to hide your treasure is in the building. Though you can hide it anywhere, this is one of the places you are least likely to run into the pirate. He will only steal treasures when you are in the same room as they are, and you can easily make sure that the building is the place you visit least.

Useful Objects

What is not treasure can probably be used to get treasure. In general, no loose object in the cave is

without a purpose. Each has a specific use and works only in a particular place. Be careful of objects that appear to work in two places; they often require the use of a secondary object or extreme caution in order to be safely used. And, just to make things difficult, the purpose of many of the objects is not readily apparent, and they are often located far from where you will eventually use them. Be careful of objects that appear to indicate a usefulness very close by to where they are found. It may be a trick and, if it is, you probably won't be able to use these objects later when you need them.

It takes imagination, daring, and trial and error (surprise) to find the proper use for each object. (It doesn't hurt to remember some of your Greek mythology either.) As with the magic words, if what you try works, there will be no question. And, even if what you try doesn't work, you may still learn something. If you are carrying a sword and say "stab snake" and get a response of "Huh??" you know that the command "Stab" doesn't exist and can't be used with any object. If the response is "don't be ridiculous" or "I don't know how to stab such a thing," then you know that the "stab" command does exist but that it does not work in the present case. Or, if the response is "I don't know the word snake" then you know that the "stab" command does exist but that nothing useful can be done to the snake and you can give up trying different actions on it.

Sometimes you'll think of a solution when you aren't carrying the right object. Fortunately, you can try out the solution anyway, and if the solution positively won't work you'll be told "Huh?" or "Don't be ridiculous." If there's a chance it will work, you'll be told "You're not carrying it." In this case, it might be worthwhile going back for the object to give it a try.

Finally, there are a few things you can do to save time. Set up a base central to where you are working in the cave and deposit all the potentially useful objects there. This way you will have quick access to any object that you may need. Also, you should keep a list of valid commands that can be referred to on occasion. And, keep a list of unsuccessful solutions to a particular problem until you do find the right one so that you won't repeat trying bad solutions. (It can take several games before you finally hit upon the right solution.)

Finding Clues

There are vague clues scattered throughout the cave which appear in your guide's description of a room or in his response to something you've done. Clues of both types can usually be identified because they give more information than would normally be expected. For instance, "You are not strong enough to do X" is more information than the often heard "Nothing happens" or "Don't be ridiculous!" Thus, "you are not strong enough to do X" implies that there may be a way for you to become strong enough to do X. Because there is always only one solution for each problem, it also implies that finding a way to become strong is the only solution to X.

Warnings are equally vague. If you've explored the cave for very long, you've probably realized that your guide is rarely definite about anything. You are often told that "you will likely fall in a pit," "probably won't be able to get back up", or that a certain action is "dangerous." In the cave, "dangerous" is synonymous with "deadly" and "probably" and "likely" are the same as "definitely." Also, vitally important warnings are not always obvious and sometimes are woven subtly into the general descriptions you are given. For instance, if you are told you are crossing an old, worn bridge, you may want to judge carefully what you bring back across.

Defying Dragons and Doing in Dwarves

Dragons and their ilk (snakes, trolls, ogres, etc.) are nasty creatures that make a living out of blocking your path (and this means you can assume that there's treasure beyond them). In dealing with these creatures, you will find that they each have their own special strengths and particular weaknesses and that the same solution will never work twice. Therefore, when you come to a new creature, try only the solutions that you haven't used on other creatures. While dwarves are not thieves and don't usually block your path, they are homicidal axe-and-knife tossers. The first dwarf you meet will be the axe tosser; fortunately the cave's made him so arthritic that he never hits what he aims at. The rest of the dwarves you meet will be myopic knife throwers who usually need several tries before they hit anything besides the cave wall. However, they are persistent and will eventually find their mark (you!). The only safe way to get a dwarf is with an axe. Hand to hand combat sometimes works but is risky, because occasionally a dwarf will cheat and pull a knife.

I hope you've found this article useful; it's a big cave and I'm sure that you'll discover some tricks of your own. Be sure to let me know when you do. Good luck, and see you in the stalactites! ◘

HOT TIP

When using ^QB to reform a document from the beginning, the document will reform much faster if you enter the command ^QB^C. Also, if you are using the N option when using ^QA, find and replace, immediately after hitting return, hit a cursor movement key such as ^S. This prevents the screen updating which considerably speeds up find and replace.

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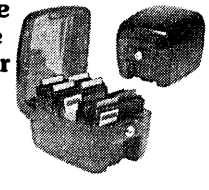

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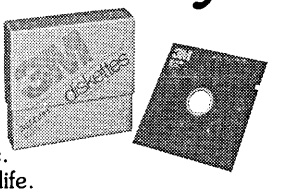

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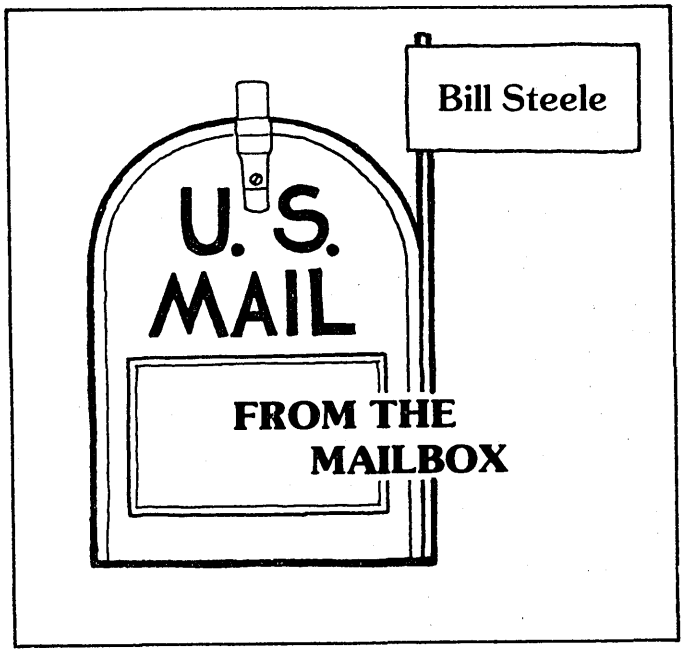

I didn't believe anyone would actually write to me, this upstart who is replacing Stan Ahalt as peruser of the Mailbox. But sure enough, the letters have come, with the same mixture of anguished cries for help and warmly offered suggestions as in the past. Keep at it, folks; the address is Bill Steele, Box 782, Ithaca, NY 14851, 607-273-2132. MCIMail: WSTEELE, 254-5833. Since both Dave Block and Art Zemon have discontinued their columns, a bunch of mail with questions for them has also been piling up in the office. We finally decided to deal with it all in this column, which is why it may be a little long this month. Again, apologies to those who've been waiting a while for answers.

Speaking of anguish, listen to this from Lawrence A. Moore Jr. in Gualala, CA: "Somewhere within the block commands of NewWord there lurks a Pooka. Definitely in versions 2.05 and 2.14; possibly in others. I was going through 10-page files, using ^KB/^KK to make blocks, ^KW to copy them elsewhere, then ^KY to erase the original. When I opened one of the files later, it started somewhere far down the file, having dumped everything above that. It wasn't only the top of the files that had been messed. I found more and more which had been mangled in the middle. One entry would be jammed into another, and chunks of the file would repeat. It lost some data and duplicated others, leaving the total file length about the same. Therefore there's no easy way, such as STAT, to check if files have been mangled. That's how I know it's a Pooka. Only a Pooka would be so sly."

I passed a copy of Mr. Moore's letter to NewStar, who said they'd look into it further. Meanwhile, it would help to know if anyone else has had a similar problem.

William H. Hunter of Riverside, CA wonders if there's any way to copy a friend's Northstar BASIC program into his MD5.

There's no way to convert a disk written on a Northstar to Morrow format or anything else we can read. Northstar uses "hard-sectored" disks, which have a circle of little holes where our "soft-sectored" ones have just one hole, and the disk drive uses a light and photocell to tell it which sector is being read. The only way to transfer the program would be over the phone via modem, or by hooking the two computers together directly with a "null modem" cable.

That may not be as easy as it sounds, though. Dr. Donna J. Guy of Tucson, AZ had an MD2 converted to an MD3 by a long-gone Morrow dealer; she also has an Epson PX8 Geneva. She'd like to transfer files from one computer to the other, using an Epson 725 cable, which Epson apparently calls a null modem cable. The problem is her MD2 manual doesn't give the jumper settings for the MD3 serial port. The Epson has its own weird serial port connector, so she has to use the Epson cable, with the unique connector on one end and a DB-25 plug on the other. The diagram she sent of the cable shows some strange-looking connections.

I've sent her a copy of the jumper diagrams in my MD3 manual. Let's hope that works. Has anyone out there had experience with this kind of setup? She also needs to know the correct PIP commands for sending and receiving data.

Joe Day's request for information on using a computer to do genealogy brought a response from Randy Bosma of South Holland, IL, who sent a copy of an article, "Tracing Your Roots by Computer," from the January, 1984 Software Supermarket. It lists four commercially available genealogy programs for CP/M: Treesearch, Roots/M, Family Roots and Family Ties, (which range in price from $49.95 to $200), and three newsletters relating to computers in genealogy: Genealogical Computing (bimonthly, $20/yr. from Data Transfer Associates, Inc., 5102 Pommeroy Dr., Fairfax, VA 22032 -- they also have a computer bulletin board for genealogists); Genealogical Computer Pioneer (quarterly, $20/yr. from Posey Enterprises, P.O. Box 338, Orem, UT 84057); and the quarterly newsletter of the National Genealogical Society's Computer Interest Group (c/o William K. Johnson, 1921 Sunderland Pl. NW, Washington, DC 20036.) SASE recommended with queries.

Roxanne Shields of Houghton, MI uses Family Roots and notes that it is written in MBASIC, making it both slow and user-modifiable. She also mentions a program supplied by the Church of Jesus Christ of Latter Day Saints (the Mormons). She heard that this program allows you to contact the computer in the Mormon library in Salt Lake City, which has "most of the known genealogical material in the world."

I checked with Lance Jacobs of LDS Ancestral File Operations (50 East North Temple, Salt Lake City, UT 84150), and learned that the church has offered a program for genealogical record-keeping on the IBM PC for about two years. Release II will be coming out early in 1986, in MS-DOS, Apple II and CP/M versions, for $35. The CP/M version is to be released in Kaypro

format, but is not supposed to be machine-specific. Jacobs says the software will include a communications program to allow researchers to exchange data with one another, but that the church's computer system will probably not be online for several years. For those who missed it, Joe Day reported on his own genealogical work, using Pearl and MBASIC, in the DEC 85/JAN 86 issue of MOR (Vol. 2, #6, p. 26).

In response to another question of Joe's, Randy Bosma adds, "I am not sure why his copy of NewWord prints a 'P' at the top of every page. A tip I read somewhere warned that unusual bugs suddenly showing up in programs may be due to a worn disk; the solution was to reinstall on a new, freshly formatted disk."

Printer problems occupy many of our letters. Dr. E.T. Schmeisser of Kirby, TX sends along a copy of a letter to Star Micronics about troubles with his Gemini 10X printer and WordStar 3.3 installed for "Backspacing TTY" with no protocol, running on an MD2 Rev. 1.3, with MDT-20 terminal and ZCPR. "The same text prints bi-directionally with appropriate margins in 10 and 17 cpi; with a ^PA shift to 12 cpi (escape sequence issued: 1B 42 02 hex), the printer shifts to unidirectional printing except at the first line of a paragraph (usually). The first line is printed with the right margin at column 96. [In the example he sent, the first line of a paragraph was indented to column 19, in justified print.] Occasionally, the switch back to normal print also fails, as does the right margin with 17 cpi."

Sounds to me like the printer is doing something strange with tab characters. Or maybe a bug in ZCPR? Gemini printers usually work fine if you install for Epson. Anyone else have this sort of problem?

I don't know what Dr. Schmeisser has tried already, but my general advice on this is the same Stan Ahalt used to pass out: try to isolate the problem. Is it the hardware or the software? Hook your printer to someone else's computer, or vice versa, and see if it does the same thing; try someone else's copy of WordStar; try your WS on someone else's computer; copy WS to a new disk or reinstall as suggested above; use DDT or the WS patcher to check the patch points to be sure they have the correct escape codes; try putting the same escape codes in different print controls, and so on. (When I set up my system I couldn't get 15 pitch to work from ^PA/^PN, so I plugged the same control codes into ^PE/^PR and they worked fine; I never did find out why.)

Dr. Schmeisser is also looking for a repair facility or a source for parts for his MDT-20 -- replacement keys and a transformer, at the moment. He'd also like an "inexpensive" hard disk for an MD2. Kirby, I gather, is near San Antonio.

(continued)

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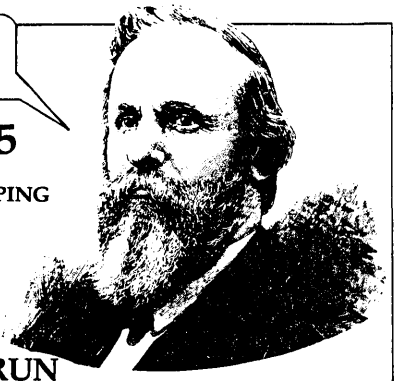

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More Gemini 10X problems from David and Nadine Hogan of Binghamton, NY: "We installed NewWord with Epson (later we purchased the upgrade and installed with Gemini which we thought would solve the problem but it did not), and found that the printer would keep going back and forth--not doublestriking but jerking back and forth as it printed. We finally pinpointed the problem to word wrap. If we use word wrap in the document and use any printer driver other than Draft, it does this and takes forever to print."

This seems to be what the people at NewStar call "The Epson Problem." The Epson and Gemini printers (similar control codes) have no command for microspacing. So NewWord does microjustification, e.g. when you want to print proportionally (see MOR Vol. 2, #1, February 1985, p.16) by switching to graphics mode for a small movement, then switching back to print. This goes away if you turn off microjustification in any way, such as by turning off word wrap or using the Draft printer driver. The solution is to turn off microjustification at the beginning of the document with the dot command ".ujoff" or reinstall NewWord so it comes up with microjustification off as the default. If you want microjustification, you just have to put up with the stuttering.

Dale Creasy of Fair Oaks, CA originally requested information on customizing NewWord for the Panasonic KX-P1092 Multi-Mode printer. He later wrote that he'd solved the problem by buying the upgraded NewWord, which includes a driver for that printer. Now he finds that the custom print control dot commands don't work. The new NW has six user-patchable print controls -- the old ^PQ, ^PW, ^PE and ^PR, plus ^P[and ^P] -- and you can change what they do in the middle of a file by using dot commands. However, Mr. Creasy finds that the dot commands seem to work for only one line at a time, and wonders if anyone else has encountered the same problem and solved it.

According to NewStar, the programmable print controls were added partly as a solution to the complaints of people like me who had non-standard printers and were stuck with the Draft Printer driver. They warn in the manual that the dot commands "may give strange results" when used for functions the driver is already controlling.

Robert L. Miller of Eleele, Hawaii and John A. Birmingham of Broken Arrow, Oklahoma (how's that for variety!) both want to know how to print the extra characters on their printwheels. There are three possibilities:

1. Some printwheels have characters that are not in the ASCII set, in place of ASCII characters. On my TTX-1010, for example, the tilde, caret, accent grave and backslash print out from a NewWord file as a cents

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sign, "1/4," degree symbol, and "1/2," respectively. Try typing all the non-alphanumeric characters on your keyboard into a file and see what you get when you print it.

2. Some characters on some printwheels are "shift" characters, which will print when you send the other character on the same petal preceded by a "shift out" character (14 ASCII, 0E hex). To get out of shifted mode send a "shift in" (15 ASCII, 0F hex). Run your INSTALL program and plug these two codes into two of the user programmable print codes -- ^PQ, ^PW, ^PE or ^PR. Say you use ^PQ and ^PW. Now, type ^PQ before a character that can be shifted and ^PW after it, and your printer will print the shifted character instead of the character you typed. If your printer has a built-in test program, that should print out both the shifted and unshifted characters. If not, try this MBASIC program:

```
10 LPRINT TAB(10);
20 FOR I=33 TO 127
30 LPRINT CHR$(I);
40 NEXT I
50 LPRINT CHR$(14)
60 LPRINT TAB(10);
70 FOR I=33 TO 127
80 LPRINT CHR$(I);
90 NEXT I
100 LPRINT CHR$(15)
110 END
```

3. On some printers there are "phantom" characters, which will print when the printer receives the SPACE (20 hex) or DELETE characters (7F hex). If these characters exist on your printer, the manual should say so. From WordStar or NewWord you can print them by entering ^PF and ^PG (even though ^PG is not on the NewWord menu).

Bryan L. Swinney of Tempe, AZ would like to know if either of two boards he read about in Byte--Southern Pacific's HD64B180, billed as Kaypro-compatible, and Micromint's SB180, both using the Hitachi HD64180 microprocessor--could be used to "replace" his MD2.

Both boards run at 6Mhz, access a lot of memory and are billed as Z-80-compatible. These boards are single board computers: attach a power supply and disk drives and go. If you're up to building a computer that way--it will take some fairly sophisticated understanding of both hardware and software--go to it, but there's no way it will just plug in to your MD2. (There's no reason something that plugs into a Kaypro will be compatible with a Morrow; more likely just the opposite.) What you'd be doing, really, is building a new computer in the old MD2 box. Sounds like it might be easier and safer to keep the MD2 and buy a new box. Another approach might be to buy a blown-out Kaypro and add the new board. Has anyone out there done anything like this? We could use an article for the upcoming issue on "Upgrades and Enchancements" (currently scheduled for June/July 1986).

Gary Taylor of Taylor Business Software, 888 N. Main St., B-20, Santa Ana, CA 92701, 714-567-4785, writes in response to the letter from Bhagavan Buritz in MOR Vol. 2, #5, Oct/Nov 1985, "I have the Open Systems accounting software running on my MD11 and would be willing to help Mr. Buritz get his system up and running. I also ran into problems with the terminal configurator (TCONFIG) at first, however, on my system it just locked the system up (ROM Vers. 1.8)." Mr. Taylor's business includes selling a long list of modifications to the OS software.

BAMDUA sends along a letter from Bob Cook of Lakeside, MT: "As a builder I need good job-costing software integrated with standard accounting software. None of the programs coming on the market are in CP/M. I read of a manufacturer who made a number of [conversion] kits for the Morrow, from the 8080 up to the 68000 CPU. Does anyone know of this source?"

Silvia Ator of W. Willington, CT is having trouble programming the function keys of her Liberty 100 (alias MDT-50) terminal with the XtraKey key redefinition program, and wants to know how to "disconnect" the function keys.

I'm not sure what she means by that, but the function keys on the MDT-50 are hardwired so that each one sends a burst of three characters, and there's no way to change that. This means that if XtraKey doesn't have a provision for programming function keys, as SmartKey II does, there is probably no way to do it. Could someone out there who's familiar with XtraKey supply more help?

A reminder: function keys on most terminals can be reprogrammed inside NewWord (see my article in MOR, Vol. 1, #4, Oct. 1984). This method will also reprogram the four editing keys above the MDT-50 numeric keypad, giving a total of 28 possible functions. Incidentally, Liberty Electronics has moved from the old Clement St. address. The address for technical questions or repair information is Liberty Electronics, 332 Harbor Way, South San Francisco, CA 94080, phone 415-742-9950.

J. Charles Eldridge, PhD, of Wake Forest University in Winston-Salem, NC, is retiring an old PDP-8 but wants to keep the FORTRAN programs. He asks, "Has anyone developed a FORTRAN system to operate on the Morrow and CP/M? It would be a lot easier for us to redo the programs in another FORTRAN than to rewrite them in Microsoft BASIC."

The only one I know of is Nevada FORTRAN from Ellis Computing, 3917 Noriega St., San Francisco, CA 94122, 415-753-0186. Ellis also has versions of COBOL, BASIC and Pilot, all at $39.95 each. Anyone know how good they are, or if there are any others?

Now there are rumors of undocumented commands in Morrow Pilot. How about it, all you experimenters out there?

FUNCTIONAL COMPARISONS OF DATABASE SOFTWARE

by P. Kurt Schmidt

Discussions of several of the merits and drawbacks of the database management program, Personal Pearl, have appeared recently in Morrow Owners' Review (Oct/Nov 1985, Vol. 2, #5). As a seasoned Pearl user, instructor and consultant, I would like to contribute an as-yet-unexpressed point of view.

The debate concerning relational database management software (RDBMS) is as hot as it is largely because of differences in style, and less so because of differences in function. While the style with which software interacts with its user is significant, it would be foolish to downplay the importance of how the software actually performs.

Leaving the issue of style aside, I decided to make a strict functional comparison of some RDBM software. First, I determined that the job of any RDBMS is to "crunch" data at an affordable price. The more data it can crunch in one process, the more powerful it is. The lower the price per unit of processing power, the more cost-effective it is. So the prime criterion of RDBMS evaluation is price per unit of data crunched per process.

Consider Table 1. Published data in two recent buyers' guides (Personal Software, August 1984; Personal Computing, March 1985) were entered into a Pearl "form." Where a value was either unlimited or limited by disk capacity, the field was filled with nines. To facilitate first-order comparisons, Cost (in dollars per field per process) was computed by dividing the product of Fields per record and Files per process into Price; the resulting table was reported to LogiCalc for sorting on this new field.

This type of functional comparison indicates that, as designed, Pearl should be a very capable and cost-effective data cruncher. My experience confirms that it is, indeed.

Beyond cost criteria, pertinent factors to weigh include the limits imposed by the hardware used, as well as the limits programmed into the software itself. For example, the data shown in Table 1 would lead us to believe that we could use Personal Pearl on our Morrows to define a single field (data area) that filled the whole 24-line display (1920 characters). In practice, field length is limited to the width of our 80-column displays. The hardware limits the software to 4.2% of its capability.

Other hardware factors can limit the software's performance even further. This is especially true if random-access memory (RAM) is limited. Where memory can be added, as in MS-DOS machines, Pearl (2.11) runs at its limit in about 320k of RAM. But when a Pearl program is loaded into the RAM of a 64k Morrow, it occupies the majority of the Transient Program Area. Only the remaining "free memory" is available for data processing. Since Pearl is designed around a system of "program files," some of which must be read into RAM in their entirety, the actual amount of data crunchable per process on a CP/M machine is much less than the software limit.

Kurt Schmidt designs technical and scientific instruction for business and industry. His firm, Instructional Media Designs, offers software training courses for users of Morrow microcomputers, and has just expanded to include Personal Pearl programming. (200 W. Mercer, Suite 114, Seattle, WA 98119)

Table 1: 64k CP/M RDBMS Buyers' Guide Data

Program Name	Price ($)	Char's /field	Char's /rec	Fields /rec	# Key Words	Records /file	Files/ Proces	Cost $/f/p
The Sensible Solution	695	255	99999	99999	10	999999	16	0.0000
DBPack III	395	32000	99999	32000	32000	32000	99999	0.0000
Mag/Base 1	295	50	4096	999	99	999999	5	0.0590
CIA Relational	295	255	25000	255	100	64000	15	0.0770
Mag/Base 2	495	50	4096	999	99	999999	5	0.0990
InfoStar	495	255	4000	255	120	65535	16	0.1210
DB 3	249	4000	4000	100	100	65535	19	0.1310
Mag/Base 3	795	50	4096	999	99	999999	5	0.1590
Personal Pearl	295	1920	20000	250	250	999999	5	0.2360
DataVu Plus	250	127	16129	127	127	999999	8	0.2460
DataFlex	750	255	255	255	4	64000	5	0.5880
Selector V	450	129	5000	89	99	99999	7	0.7220
Condor 1	295	127	1000	127	8	65000	3	0.7740
Probase	300	64	1024	64	10	65536	6	0.7810
Condor 3	650	127	1000	127	8	65000	3	1.7060
Dax Plus	549	255	1020	255	1	32767	1	2.1530
Dbase II	495	254	1000	32	32	65535	2	7.7340

Table 1 presents Personal Pearl as capable of processing 5 files (forms) of 250 fields (data areas) each. That's 1,250 fields per process. But if you try to design--not to mention install and operate--such large forms on CP/M hardware, you'll be booted out of the program faster than you can say "Eight Bit Chip!"

To determine the practical capabilities of Personal Pearl (version 1.05) on typical Morrow hardware, I ran a series of tests using an MD2 (ROM Rev. 2.3A, CP/M 2.2 Rev. 2.1).

I built forms and reports of sufficient size to run just short of obtaining an "Out Of Memory" Program Stop Code. Actual memory usage was compared with published figures (PearlSoft Technical Memo TM2, 8/9/83), revealing numerous discrepancies (Table 2).

Table 2: Actual Memory Use
Personal Pearl

		Form	Report
Base "free memory"		13,208	17,437
Fixed overheads			
data area:			
character,	not indexed	68	65
	indexed	104	101
date,	not indexed	90	79
	indexed	132	121
numeric,	not indexed	84	81
	indexed	136	134
background text on new line		8	20
Length factors			
character,	not indexed	4	3
	indexed	6	5
numeric,	indexed or not	3	2
Outside forms			
first		2,760	2,682
second, third, fourth		1,000	923

There were other surprises: Not all of the "free memory" can always be used; when memory subsections overflow, processing simply stops. Two large forms can crash a report that only picks a few fields from each (even PearlSoft Technical Support was surprised). The most enjoyable overflow condition results in the undocumented "WHOOPS" error message after about six suspense-filled minutes of steadfast installation.

With the effects of field length and type at least partially predictable, my task boiled down to determining the maximum number of single-character fields the system could report in a single process. The results I got for Personal Pearl under CP/M 2.2 were significantly lower than the published software limit (Table 1), but still more than adequate for many serious business and scientific applications (see Table 3).

Table 3: Output Fields per Process
Personal Pearl

Files Open/ Process	Fields per record	Free Memory... on Form	on Report	Maximum Fields Reported
1	111	5,178	6,649	111
2	92	6,546	1,973	184
3	56	9,138	1,898	168
4	41	10,218	1,235	164
5	20	11,720	584	100

The ability to process several files simultaneously is essential to efficient operation in fully relational applications (as opposed to simple lists such as calendars and address books). This is because the database can be radically re-structured to reflect relationships inherent to the application; disk overhead, redundancies, and processing time can be dramatically reduced. In other words, the performance of an RDBMS during multiple-file processing can carry more weight than any other factor. This "files per process" factor places Personal Pearl, InfoStar, and the Mag/Bases in a league which is functionally different from that of Dax Plus and dBASE II.

Another important factor, especially for owners of floppy-disk machines (MD1,2,3), is disk space consumed per unit of data storage. Few programs can store a single data file over two disks, so the more space a given number of records will occupy on the disk, the fewer records the database can access.

Here, I can offer one direct comparison. To store 912 mail list records, dBASE II required 164k of allocated disk space while Personal Pearl used only 60k. (The File Loader was used to electronically copy the dBASE records into Pearl, ensuring comparison of identical items.) Using STAT to determine the data file sizes with 128-byte precision, I found that Pearl stored 2.76 times as many records per unit disk space.

Using these numbers, we can predict how many of these records a floppy will hold under each program, provided we take into account the following: Pearl needs only 10k of blank space on the data disk to perform file maintenance and other tasks, whereas dBASE II requires as much blank space as is occupied by the database file. In practice, this doubles the disk space consumed per unit data storage and cuts the number of records per disk in half for dBASE II.

Table 4 predicts that on a floppy machine, dBASE II's data capacity is about 19% that of Personal Pearl, and that dBASE II could not maintain the 912-record file on an MD2 (which is why my double-sided MD3 was often borrowed for such operations).

Table 4: Predicted Records per Floppy

Program	Records	Data File bytes	bytes per record	Max Capacity records/disk ss/dd	ds/dd
Pearl	912	60,416	66.24	2,672	5,781
dBaseII	912	166,912	183.0	520	1,074

Compare these figures with the published software limits and consider your alternatives. You'll see why many Personal Pearl users are so unshakable: It is a very well-engineered and highly refined product. But because it is underpriced (and cannot be mass marketed), it does not enjoy the popularity it might if users rated programs purely on performance.

Which brings us to the matter of style. We bought the Morrow motto--"Build it cheap, sell it for less"-- with our Micro Decisions; we own well-engineered but underpriced and undermarketed machines. When it came to selecting the software it would bundle with its computers, Morrow also made intelligent choices. In particular, the little sleeping dynamo of a database system, the one with the unconventional name, is a perfect match.

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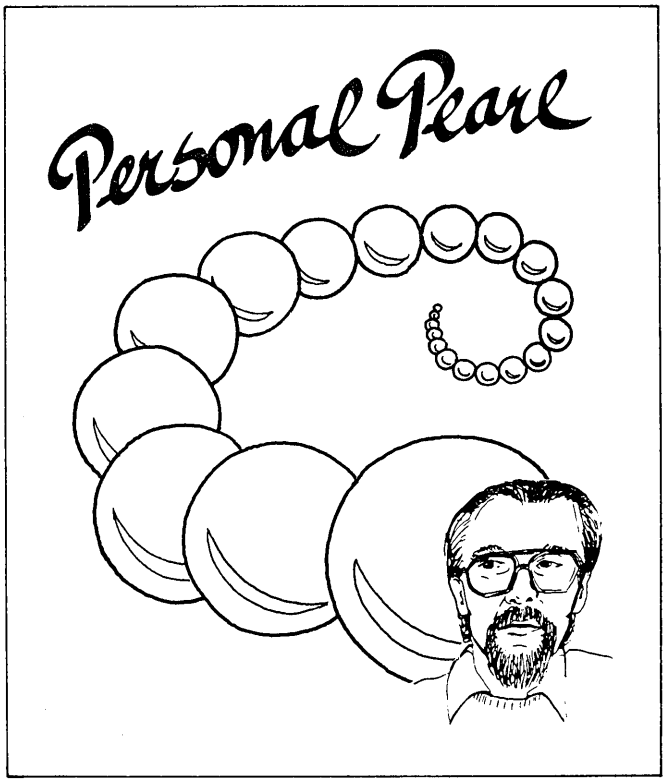


by Bruce Gowens

GETTING PERSONAL WITH PEARL

Seed Pearl

In this first column on Personal Pearl, it seems worthwhile to mention what my expectations of the column will be. In the Oct/Nov 1985 issue of MOR (Vol. 2, #5), I published an overview of Personal Pearl and a review of Pearl File Load. Since a full discussion of problems, tricks and applications wasn't possible in that context, I made an offer to help anyone with questions by phone or mail, and proposed a regular column on Pearl in MOR. I felt that the expected flood of questions and problems generated by my offer would give plenty of material to choose from.

Instead, I've received a number of complimentary notes and some praises for Pearl but few real problems.

My offer of help still holds, but with a change: Mail Only--no more phone calls. And be sure to include that SASE--the one letter I haven't answered didn't. (You know who you are.) I'll be using the most common or interesting responses for this column.

This issue's column will be just be an introduction and some notes, and future columns will be in response to problems or illustrations of interesting applications. Please send along any interesting ways you've used Pearl, with an explanation of the need and the design aid printouts. I'll be depending on the mail box to let me know what you'd like discussed.

Tora! Tora! Tora!

InfoWorld has published a report that PearlSoft may soon be taken over by Ashton-Tate, the dBase people. Apparently Ashton-Tate likes the Pearl development system (a programming system that preceded the Personal Pearl data base).

I spoke with Rita Miles of PearlSoft just before our press time. She acknowledges that discussions are going on between PearlSoft and Ashton-Tate, but refused to say how certain any of the plans are. She did state that Personal Pearl would continue to be supported, and that there was no problem for those who have paid for support agreements. There is considerable doubt in my mind whether Personal Pearl will continue to be developed or even sold, and I found it impossible to pin Ms. Miles down on that point.

My "ulterior" motive in initially offering help to Pearl users was to gain input for my book on Pearl. Now I'm putting that project aside until PearlSoft's status is clarified, since publishers are not interested in books on discontinued software. I do want to thank the many of you who called just to tell me you wanted a copy.

Oyster Bed

When helping out at the MOR office I discovered, in our advertiser data base, what must be a common confusion when designing a form--the use of a character field type when a number should have been used, and number when character should have been used. This is an easy mistake to make, since some character data, such as phone numbers, are in number form. The main rule is: NUMBER TYPE IS FOR WHEN YOU MIGHT WANT TO CALCULATE WITH THE DATA. Otherwise use character type.

For example, a field for the last four digits of a phone number is set as number type. When a number such as 0305 is entered, you will see 305 on the screen or a report since the leading 0 is superfluous for a number. Since you do not calculate with phone numbers, this file should have been character type.

Often the opposite mistake is made, usually in short fields used to tag records. For example, MOR has a one-character field for each issue. Each time an advertiser places in an issue, an "X" is entered in that issue's field. Otherwise it is left blank. This works, and on the face of it is just fine. A little more thought, however, will show that these tag fields should have been numerical.

Why? Because you can't add "X's." By making the tag field numerical, and using a "1" instead of an "X," the number of insertions can be added together. As a matter of fact, this can be carried a bit further. Another field is a number indicating the size of the

ad. Why not combine that with the field for insertions? Thus if an advertiser changes his add size between issues there is a way of recording it, and total advertising pages can still be added up using the issue field.

So often you find you need new forms of data from an existing database, but can't easily do it because not enough effort was taken to plan ahead. By being very careful with the choice of number or character type for a field, you'll save yourself hassles and make your databases more useful.

Shucking Bee

Multiple report sections on one page seem to give some problems, usually with fixed type reports. This is briefly mentioned on page 37 of the General Reference section of the Morrow PP manual (PearlSoft manual page R-46). Here's how to do it:

In Produce Reports after Option 1, "Selection Values," go to Option 2, "Print Details." The first line is a title (I always put the date and a note of the selection values here to keep masses of paper straight). Then lines two and three are where the confusion seems to happen.

Line two, "NUMBER OF REPORT LINES," is the number of lines of information in the report. An address, for example, might have five. If you enter more than 5 here, there will be blank lines after each address. So far, so good.

Line three, "TOTAL LINES PER PAGE," adjusts the output for pages of different lengths, such as address labels where each label is considered a page. If you leave this blank, Pearl will send a "form feed" character to your printer. Your printer has been quietly keeping track of how many lines it has printed, and when it gets the form feed character it advances the paper to the next page. Of course, it thinks each page is 66 lines (usually -- most printers are 6 lines per inch). The printer won't know that you have file or rolodex cards or labels in it.

If you put a number in this space, Pearl will not use the form feed character. Instead it will count lines and then send the needed number of blank lines to get to the next page. Therefore, to print more than one record of a fixed report on the same page you "fool" Pearl about your page length. Number of lines per page (usually 66) equals page length in inches (usually 11) times lines per inch (usually 6). Divide the number of records per page that you want into the number of lines per page, providing the answer is not less than the number of report lines (line two). Normally then, for two records per page, enter 33, for three enter 22, for five enter 11, and for ten enter 6. Since four, five, and seven through nine do not divide into 66 you are stuck with these choices (unless you don't mind it printing over the perfs or your printer or paper length is unusual).

String of Pearls

Pearl has no way to search a field for a keyword unless it is the first character of a field. That has led to one interesting inquiry that some of our readers might have a better answer for than mine. I'll quote from the letter:

"I deal with Arabic names where it is important to be able to locate character strings inside a larger name, e.g. to find 'Muhammad el Kheir' inside 'el Hag Ali Muhammad el Kheir Ahmed'."

(The writer, incidentally, is using Pearl to organize dissertation data.)

I expect it is not practical to arrange the name in a way sufficient to find all of the possible needed substrings, and that an a.k.a. ("also known as") field would have the same problem.

My only suggestion was to make a two item report to disk (by putting a file name on the Produce Reports Print Details line four) consisting of the key indexed field, the field containing the name, and perhaps another identifying field if there might be duplicate names. With all fields on the same line, one can set both "NUMBER OF REPORT LINES" and "TOTAL LINES PER PAGE" to 1 and have a nice set of columns in the ASCII file. Then this could be searched for the substring by a string finding program or ^QF of WordStar to discover the key indexed field to find the record. It's a bit awkward. If there are any other suggestions I'll pass them on.

Oyster Stew

When designing forms, I like to use both upper and lower case in my field prompts to help later when designing reports or other forms. For example, if I have a field prompted by "MOther's MAiden NaMe:" I'll know that the field name is 'MOMANM'. "Accounts RECeiVable" would be "RECV" and so forth. Believe me, it helps.

If someone besides the designer is going to be entering data in a Pearl database, you can give them a custom help screen to explain the form of data for your fields or the purpose of each field. At the top or bottom of the form, put a line such as:

FOR HELP, USE ^C

Then use a ^C and write the help screen. Add a single character field that will not be used for data. You should also put in a line such as:

USE ^R TO RETURN TO DATA ENTRY

Then use a ^R to continue designing your form layout.

We have used the second page of a form to hold the help screen. You need to have at least one data field on this second page so that it can be accessed during data entry. ■

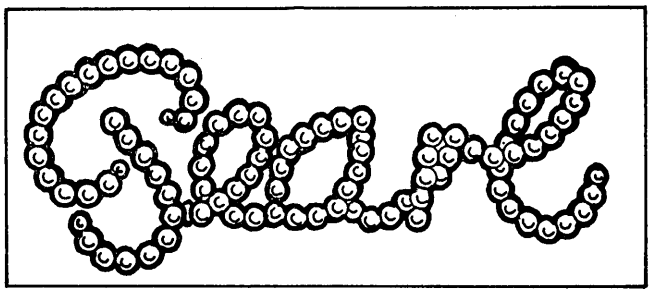
PERSONAL PEARL HINTS AND KINKS

by Ed Buscall

After reading the Oct/Nov '85 issue of MOR on the theme of Databases and Business Applications, I wanted to offer some responses and tips on questions about Personal Pearl.

Though I agree with some of the statements made by I.I. Butler in his article, "Let's Get Rid of Personal Pearl"--I am well aware of Pearl's deficiencies--I also find that Pearl has a place and can do a very good job in it. While other database programs, such as InfoStar and dBASE are more flexible, they are also much harder to use (especially dBASE). I have found ways to work around Pearl's limitations, and I'd like to mention a few here.

Sometimes it is necessary for a report to start on a new page when data changes. For example, I have a report that lists the various local executive committees of a club I belong to, and I want it to start at a new page with each branch. From the manual, it would appear that all you need to do is to put a <PAGE> command at the bottom of the report in the SUB-TOTAL section. This will not work unless you are



actually calculating a sub-total, which in an executive committee list obviously is not being done. The solution to this is to create a one character dummy field in the sub-total section at the very left of the report page. Name this field PAGE, and when Pearl asks you for the optional formula for calculation, just put in 0+10. Because 10 is two characters, the result will be the printing of a * on the report after the last line of data has been printed, and then Pearl will start a new page for the next list of data.

NOTE: The first SORT field must be the name of the field that you wish to change pages on. For example, in my case, it is a field called EXEC that contains a number code for each of the local committees. For this particular report, my main database has all the members listed with various code numbers for them if they are on a committee; the code numbers not only state which committee but also which position is held. I then have two further small databases--one which lists all the committees by name against a code number and one that lists all the positions against a code number. For example, President is 01, Secretary-Treasurer is 02, etc. When the report prints out, not only does it print the name of the local committee at the top of the page, it also prints all the executive titles followed by the name of the person in that position.

I keep a database of over 200 people in one of my databases with 35 fields of information on each person plus a very complicated attendance form that calculates all their pay according to their attendance and sorts it by department, so that at the end of the month, I not only have a report that lists all the attendees and non-attendees, but I have a report with all their pay, plus reports that divide that pay into the various departments so that we can feed the information into a SuperCalc spreadsheet for budget/expenditure control.

* * *

If you have an MD3, Pearl only takes two program diskettes, one for Design Forms and Reports and one for Enter Data and Produce Reports plus SORT. This means that after the initial designing, you only need one program disk to actually use Personal Pearl and obviates the need to change diskettes to do the sort while producing a report.

* * *

In his article, "Reflections on dBASE II, Comparing Gold to Pearl" (MOR, Oct/Nov '85), Bill Lamp'l talks about problems with using Pearl for mailing labels. The solution is to have two fields, FNAME & SURNAME, and to sort on the SURNAME. But you get the correct label by making the FNAME field in the report only one character long, followed by a period; this has to be done in option 1 (layout a report), after using option 2 (label data fields). This gives a total solution to the problem, unless you really want to put the full FNAME on the label. In that case, the alternative is to have three fields in the database: FNAME, SURNAME and PNAME, where PNAME would be, for example, "Mr & Mrs Dave Smith." You then use PNAME in your report but you sort on SURNAME.

Also, if you intend to design any reports that are in excess of 80 characters wide (i.e., using 96 characters in 12 cpi), the manual tells you how to design the report but neglects to mention that you must change the "80" in the printer data portion of INSTALL.DAT by using NewWord/WordStar in non-document mode. For people who live in Canada, it is also possible to change the Date format bit from "0" (mmddyy) to "1" (ddmmyy). ■

A NOTE ON THE C PROGRAMMING LANGUAGE

by Erik Westgard

The new third edition of The Penguin Dictionary of Computers defines C as "A high level programming language designed for systems programming, usually (but by no means exclusively) for software development in the Unix environment." If you are a computer professional, you already know something about C. If you are a beginner, you may be a bit afraid of yet another complicated piece of programming and a new set of terms and acronyms.

If as a serious amateur programmer you find yourself needing to write a terminal program, or a commercial package for sale, you might look at writing in C. C is very fast and compact, good for utility programs for sorting or copying files or other functions that need to run quickly. C is good for writing "structured" programs, which for some subtle reasons are easier to read and understand, as well as improve later--important issues in programs offered for sale.

C is not easy to learn. It is cryptic in the extreme and is just the thing for working with bit arrays and buffers, not exactly the stuff of Saturday afternoons. For most reasonable programming chores around the home or office, I'd use BASIC for the simple work, and PASCAL for the larger jobs. Both are easy to learn, fun to use and inexpensive. BASIC is of course free with most computers, and the Turbo Pascal compiler package is around $50 mail order, slightly higher at your dealer, who may be able to offer you some help.

To learn C you can start out with a reference book or two and a tutorial. The reference to have is The C Programming Language by Kernighan and Ritchie, who wrote the language. (See the bibliography below). There are dozens of C tutorials on the market. Some local colleges teach courses on C. In either event you'll need a C compiler to try out your work.

Two hundred dollars will buy an excellent, well documented, virtually bug-free C compiler. There are a number of packages out for under $100, including C/80 and Mix. There are even some public domain compilers around, most spawned by Ron Cain's original "Small-C" compiler, published back in 1980. James Hendrix has published a version 2 of this compiler, reported to be quite good, though I don't know how available that compiler is.

To support your use of and experimentation in C, we'll be running some reviews in MOR of inexpensive C compilers. We'd like your input on the whole subject of C, as well as any reviews or articles you'd like to contribute. So far, we have one public domain review ready to go. There are at least three other compilers out there as well. If your local club has a compiler in its library, or some hints on usage or patching bugs, we'd like to hear from you. Send your comments to me, care of MOR.

By way of a preview, I have been experimenting with a public domain compiler (apparently written by Mike Bernson) which is available from a number of users groups around the country. I have not had good luck with the package, which has several serious errors. Most of the problems seem to be with the output of character data to the terminal. The package lacks the standard C function "printf," which does the character output. I was not able to work around this fundamental problem. If you have experience with this version of small-c, or know the whereabouts of some later version, like Hendrix's, let me know. ■

Erik Westgard is employed as a Sales Engineer for a computer company in the midwest. In his spare time he races sailboats and writes articles for the model railroading magazines.

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IMPORTANT ANNOUNCEMENTS

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Why renew early? First of all, you get a good deal if you renew before March 15th. You get seven issues for the price of six for one-year renewals and 13 issues for the price of 12 for two-year renewals. Besides that, you will also help MOR get through its annual cash-shortage. This shortage is caused by a couple of things: 1) Subscription fees tend to arrive mainly in one big heap every year. 2) MOR still bears the debt incurred when Morrow suddenly withdrew financial support in Winter of 1985; as all of you know, the February and April 1985 issues of MOR still went out, free, before we landed again as a subscription magazine. So if you like what MOR is doing and want to help out, renew early. You'll feel renewed in turn.

Delay in PCFILE development

We are shocked to announce that the developer of PCFILE III for CP/M, Don Dietrich, has died quite suddenly. MOR author Ilbert I. Butler found this out when he called Jim Button to check on the progress of the program. Buttonware, Inc. is the firm that plans to market PCFILE III. At this time it is uncertain when or whether the CP/M conversion will be completed.

New MOR columns in the offing

Ken Grymala will start a column "On Generic CP/M" in the near future. This column will be designed for the slightly experienced but still curious computer user. Ken plans to cover CP/M across machine boundaries. Write him at: P.O. Box 2540, Manassas, VA 22110.

That long-awaited, much-requested column for beginners is on its way! Mike Allen plans to guide novices through the in's-and-out's of their computers and tour some of the mysteries of the software--all in prose he hopes will both interest and charm the most innocent of novices. Write to him: c/o Westinghouse, 7121 Standard Drive, M.S. 6080, Hanover, MD 21076-1360.

Transitions in the MOR Staff

Regrettably, soon it will be time to say goodbye to Dana and Shoshana who will be leaving MOR within the next couple of months. Dana has been with us for over two years, even before MOR got started. In January 1984 she started out as BAMDUA's Administrative Assistant. When Ed Niehaus--then with Morrow, Inc.--offered Morrow's support in starting MOR, I said to Dana: "If you want to join me in this, I'll do it." And we did! That was the innocent beginning of MOR, an endeavour within which Dana developed herself into the Advertising and Layout departments, besides handling administrative matters. She juggled umpteen jobs with admirable dedication--and occasional deep sighs--throughout the often stormy development of MOR. She loved building good relationships and turned most of our advertisers into friends. Your loyal presence will

(continued)

USING THE MM300 MODEM TO DIAL VOICE CALLS

by Bill Steele

I make a lot of long-distance telephone calls for which I get reimbursed by various employers, so I've always kept a log of numbers dialed, the party called and to whom the call should be charged. The log is also handy for checking the accuracy of my phone bill. I use an alternative long distance system which requires pulse dialing a local number, then tone dialing an access code and the number to be called. When I got my CTS MM300 modem, also known as the Morrow Modem, I realized that its auto dial capability could be used to automate dialing for voice calls as well as computer linkups, and that the computer could then keep a record of my calls.

I wrote a simple BASIC program, "M300DIAL," to do the job, and over several months I've debugged and polished and added to it to the point where I think it may be worth passing on to other Morrow Modem users. (M300DIAL is available on FLOB/FEB86; see p. 44.) Owners of other modems ought to find it simple to adapt the program to their equipment by substituting the appropriate control and status codes.

The program displays an opening menu that lets you choose to dial via your alternate long distance company or via AT&T, either direct dialing or through the operator. You enter the number to be called from the numeric keypad, just as if you were dialing a telephone; the computer automatically adds the right dialing prefixes, access codes and so on, and spits the complete dialing string out the serial port to the modem. The MM300 modem will accept a dialing string of up to 40 characters, including mixed pulse and tone dialing, and will accept commands to wait for a secondary dial tone or to pause for four seconds. You should be able to program for almost any dialing situation.

You're also asked to enter information about the call, including who is being called and the starting and ending times. If the call is completed, this is written to a disk file named "CALLS." Data in the file are arranged in columns so it can be viewed directly, edited or printed out with your word processor. Typing in information about each call seems a bit tedious at first, but it really takes no longer than scribbling the same information in a log, and the computer won't let you forget to keep the record. Once it gets to the actual dialing, the modem is a lot faster than your fingers, especially when tone dialing.

The program is purposely written in BASIC so that users can adapt it to their own situations. In fact, you won't be able to use the program without at least changing it to include your own dialing prefixes and access codes. If you're more ambitious, you might change the menu, collect different information about each call or rearrange the way information is stored in the file.

A number of variations and improvements are possible. A database function might be added to allow dialing from a directory of frequently used numbers. If you have a real-time clock you should have that handle the timing functions. ◘

Bill Steele works in Ithaca, New York as a freelance writer, specializing in science, medicine and technology. He is a member of the MOR Editorial Council and also writes the Mailbox column.

IMPORTANT ANNOUNCEMENTS, Continued

be missed, Dana. BAMDUA and MOR thank you for all your splendid efforts of the last two years, and we wish you good luck.

Shoshana joined us as a consulting editor late summer of 1984 and joined the staff half-time as Managing Editor in January 1985. Soon she took on more functions, such as Art Director and office re-organizer (did MOR ever need that!). Working 3/4 time with MOR during the last eight months, her professional abilities really came to bear fruit. She was mainly responsible for the ever-growing quality of the articles in MOR and the warm and nourishing communications with our growing circle of MOR authors. She always brimmed with new ideas and brought regularly a good dose of excitement to our staff meetings. Her dedication to the job was amazing for one so foreign to the personal computer field, since her true interests lie in the field of the Humanities. Shoshana will serve as guest editor on the April issue on the theme of Tools for Writers, Academics and Desktop Publishers, while our new Managing Editor eases in. We will miss your generous energy and spirited presence that MOR has profited so much from--through the joyful and hard times we shared. Thank you for the 18 months of your life you spent with us. We were lucky to have someone of your quality with us. And now that it is time for you to leave: Be well and good luck in your life's endeavors.

Changes in MOR Council

Welcome to Ken Grymala, the newest addition to our MOR Editorial Council. Ken has been a frequent contributor to MOR; and he and Lynda Grymala have turned out to be a formidable review team for accounting software! Ken has also been quite active in developing the MOR Technical Manuals. Along with a few other MOR Councillors, he is currently exploring future strategies for MOR. We are lucky to have Ken join us and look forward to his wise and cheerfully delivered contributions to MOR. ◘

SOFTWARE REVIEW

PROGRAM:	**TAXWORKS**
VERSION TESTED:	1984 Level II for Morrow (Overview of 1985 update follows at the end of this review.)
AUTHOR	John Hollingsworth
MANUFACTURER:	Hollingsworth Business Services 881 Alma Real Dr. Suite T-2 Pacific Palisades, CA 90272 (213) 459-2746
DISK SPACE:	Federal disk 1, 170K Federal disk 2, 176K California, 184K
PRICE:	Federal only, $400 Federal and California, $500

by Bill Roos

When I was asked by MOR to review this program, the editors wanted to be sure that I could be objective about it. This is because I am a district manager for H & R Block and taxes are my livelihood. It would be easy to pick a tax program apart. However, I had trouble finding things to pick apart in TAXWORKS, by Hollingsworth Business Services.

I reviewed the 1984 version (the 1985 wasn't ready yet) of the Professional Federal and California edition. An update review of the 1985 version is at the end of this article. It consists of the following forms and schedules: 1040, A, B, C, D, E, G, W, SE, ES, 2210, 2441, and 4562. The California has the 540, A, B, CEF, D-1, D-2, G, H, ES, 3805X, 3885, and 5805. The 1985 Federal version also has the 2106, 3903, 3468, 4797 1984 Version and 6251.

Installation on my MD3 was easy, and having two double-sided drives makes disk swapping on the Federal unnecessary. On single-sided drive machines, you will have to change disks somewhere in the Federal program. The California program requires a separate disk, and it runs alone but will pull some data from the data disk. More on that later.

The installation process tells the program what type of terminal you have and a couple of other housekeeping details. It is quickly done and you are ready to do your first return. You start by entering a three-letter or three-number code. This is used on both Federal and State returns and makes it possible for you to pull out that client's data at any time. You then select the menu which has the forms listed and begin by selecting the page 1 of the 1040 or 540.

When the page comes up on the screen, you will see only those questions from that form that need an entry. Any calculated amount will not appear during the data-entry phase. If the entry line has a "T" beside it, that means that the amount will be transferred from the appropriate form. For example, a "T" beside the interest entry on the 1040 means that the amount will be automatically entered from the data on Schedule B. If a Schedule B is not needed, the figures can be entered but any data later entered on Schedule B will override the original figures.

Essentially, every form is entered the same way. After all the data is entered on a form, you go back to the forms menu and select the next one. I am not going to take the space to describe each form, as the entries follow the sequence on the form and are straightforward and simple. The program will accept up to nine Schedule C's for husband and/or wife and will combine the totals to take the net figure to the 1040, page 1.

TAXWORKS will accommodate a separate Schedule SE for both husband and wife. While the tax will be calculated, the initial figures of net income or loss must be entered as the program will not transfer data from other schedules. The disappointing form in my opinion was the Depreciation Form 4562. The program will allow up to nine forms and they can be assigned to any one of the nine Schedule C's or any of the three properties on Schedule E or left unassigned for manual transfer to another schedule. The first thing that struck me was that there wasn't any provision for Schedule F. Even though there isn't any farm form in the program, it wouldn't take too much to include it as an option on the Form 4962 list. The other point is that there are no calculations other than to add total depreciation. You have to do all the calculations manually and then put the totals on this form. Now I know that there are lots of options, but's, if's, and and's in figuring depreciation these days, and it would no doubt take a lot of disk space to be able to calculate depreciation. Since most of the work is done manually anyway, why not eliminate the 4562 and put in the Schedule F or some other form?

Once all the data is entered, you can then calculate the return and look at any page prior to printing. If you are confident of your entries, you can calculate and print at the same time. Printing can be done in any one of three ways. The first would be to print on blank pages and use the plastic overlays (included) to copy the forms on a copier. The second method would be to insert the official forms into the printer. The biggest problem with this is that the line spacing doesn't always line up to the standard 6 lines per inch, and the bottom of the page would be off a line. The third method would be to use commercially prepared tractor forms. This isn't practical for a smaller program like this, as it can't be programmed to print all 1040 page 1's together, etc.

Bill Roos is district manager for H & R Block in Missoula, Montana. He uses his MD3 extensively for keeping church books as well as all kinds of data and wordprocessing for H & R Block and his wife's business as a realtor.

One of the nice features (possibly for someone who has employees) is that the questions and data entries can be printed out in the form of interview sheets. If the preparer asks the client every question or makes an entry for each data point, then someone else can computerize the data and do the printouts, etc. With the interview sheets, no questions will be missed and the completion of the returns will be more efficient. I only wish the printouts would be for 11-inch paper, though they fit nicely on 8-inch paper.

The California program is very similar to the Federal in operation. The only data transferred from the Federal is the name, address, Social Security numbers, and occupations as well as the net figures from the Federal Schedules C, E, and F. Once that is done, the California return is run as an independent program and does not require constant disk swapping to interface with the Federal.

Overview

Overall, I was very impressed with this tax program. It was easy to install and data entry was quick and easy. I can see why they call it the 10-minute 1040 in their ads. I got some data from some of our more complicated returns in the office and while the bigger returns will take a little longer than the 10 minutes, it was a pleasure to have the Schedule G's and 2210's done fast and accurately. Based on my test returns, it appears that each return takes about 2K per page on the data disk, and so you would get about 20-25 Federal only or about 15-20 Federal and State returns on a disk for the MD3. If you have a bigger business, you would have to keep careful records so that you would know what disk to go to get that client's file. I would question spending $400 for someone to do their own return at home, but this would be very reasonable for a smaller tax preparation firm.

1985 Version

One of the problems in reviewing tax programs is that the information for the programmer to work with isn't released until December by the IRS, yet magazine deadlines have to be early in order to make the information timely. Mr. Hollingsworth and I had the same problems as he was trying to get the 1985 version

DOING RETURNS ON A COMPUTER

by Bill Roos

As a tax preparer with H & R Block, I have mixed feelings about doing returns on the computer. My first experience with this process was in 1981, and after watching the system work, I knew a good experienced preparer could do a return faster by hand. To my mind the computer has only two things going for it, mathematical accuracy and neatness. If you have the money for the more expensive programs ($800 and up), you might get a third benefit, and that is prompting if a form is needed based on the data already entered.

H & R Block began testing computer systems about five years ago, and in August 1985 they decided to drop the large-scale testing and to continue the way they had been doing it for 30 years. There were lots of reasons for dropping the computer project, but one of the most interesting was that they found that most clients don't care if their returns are done on the computer or not. They are usually satisfied if the return is accurate and readable. Now maybe the people going to the higher-priced accounting firms expect the computer return for the fee they pay, but I had a client in my office who paid $2,500 for their 1984 return, including a $150 computer charge. They will be my client in 1985, so what did the computer gain that firm?

My biggest objection to the computer-prepared return is the time-consuming nature of the lower-priced programs. They are not efficient if a firm does any number of returns, for several reasons. One problem is the time it takes to call up each page to enter the data in the program; unlike the TAXWORKS program (see above), a lot of programs require each page to be called up separately to be printed. Making copies can also slow you down, since you have to line up the overlay in making copies, which eliminates high-speed copiers and automatic-feeding mechanisms. Mixed into the process are the pages the computer doesn't do, and since the IRS wants the returns assembled in a certain order, your efficiency goes to pieces in producing the completed product because of having to handle two types of originals. Then you have the problem of the State return, which must usually be done by hand anyway because of a lack of State programs (especially in the smaller States).

I can do an average return (Form 1040, Schedule A, two or three other schedules, and the State return) from the beginning of the interview to handing the client their finished return in 45 to 60 minutes. My time is saved by direct entry of the data on the form and in copying and assembling. The computer will be faster in calculations and possibly faster in printing finished pages. I am willing to bet that the computer and I would end up very close to each other, given the same starting point. This is assuming we are not using the high-price programs and the laser printers.

Programs like TAXWORKS and others in that price range would work well in smaller tax preparation firms where the number of returns would be five to ten a day, but much above that and I think you have to examine which system is more efficient. Time is money in this business, and the more time you spend producing each return, the less time you have for more clients, so that it's important to choose the method that works best for you.

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written and I (and the MOR editors) were anxiously waiting for the program so we could tell you of the changes. The deadline won! The following changes were discussed by phone as it was impossible to get a final version out for testing before the January 16 camera deadline.

The following forms were added to the 1985 program: 2106, 3903, 3468, 4797 and 6251. These five additional forms will make TAXWORKS capable of handling a wider variety of returns and should work like the other forms for ease of entry.

The '85 version will have multiple Schedule E's so that up to 9 rental properties can be entered. This is an increase of six over the '84 version. Mr. Hollingsworth has also changed the interview sheets (mentioned in the review above) so they are more condensed. By changing the spacing, he was able to get the information that took three pages in the '84 version onto one page in the '85 version. These are an excellent aid to speed entry of data and less pages to handle are welcome.

For the benefit of California preparers, the '85 version will transfer more data from the Federal return to the California return. Data from the Federal Schedule A & B will now transfer directly to the California Schedules A & B. The program will also automatically transfer all referenced lines applicable to Federal Schedules C, E & F to the proper place on California Schedule CEF.

Initially, only a professional version of the program was developed for 1985. However, due to the demand, Mr. Hollingsworth has decided to have an Individual Program for 1985. It will consist of the 1040 and Schedules A, B, D, G & W and will sell for $75. The California will have the 540 and Schedules A, B, D, G & H. The Federal and California will sell for $100.

One other aspect that I should point out is the ability for you to create your own tax forms. This is done with a text editor or word processor such as WordStar in the NON-DOCUMENT mode. The file is stored in ASCII format. Calculations will not be done but the data can be printed out and will match the rest of the return. You can also change the prompts and x-y printing positions of the forms included with the program. This feature might be handy if you need to fit the printing to a certain form you do a lot of and want to print it directly on that form.

By the time you read this, I expect to have tested the '85 version. If you have any questions or are interested in finding out how the new forms work, feel free to write me at H & R Block, 217 West Broadway, Missoula, MT 59802. I will answer ASAIC (as soon as I can).

Tax Preparers and Computer Programs

Anyone in the business of preparing returns should be familiar with the rules regarding who is held to be the preparer and thus the one who might be subject to penalties for understatement of the tax liability. In the Internal Revenue Bulletin No. 1985-48 dated December 2, 1985, the IRS issued Revenue Ruling 85-189 relating to computer tax programs.

In this ruling, the IRS holds that a person who prepares a computer program and sells it to customers who use it to prepare their tax return can be held to be the preparer of that return even though the programmer doesn't have anything to do with the actual data entry. Section 301.7701-15(a)(1) of the Regulations on Procedure and Administration provides that if a person furnishes a taxpayer or other preparer enough information and advice to make completing the return largely a mechanical or clerical matter, the person is considered an income tax return preparer, even though he or she does not actually place or review information on the return.

I don't see this ruling having too much effect on return preparers who are in the business of preparing returns, as we are responsible no matter how we do the return. However, this will have a effect when programs are sold to an individual who just wants to prepare his own return. You might want to read this Revenue Ruling as well as 85-187 & 188, also dealing with computer prepared returns.

SOFTWARE REVIEW

PRODUCT:	**1040 PLUS**
VERSION TESTED:	1984
MANUFACTURER:	TCAA, 6730 E. McDowell Road, Suite #103, Scottsdale, AZ 85257
DISK SPACE:	132K
PRICE:	$75.00 for main unit and $25.00 for the other forms

by Joe Day, Jr.

I have a small business preparing tax returns for individuals, and I have been interested in programs that could be used with my Morrow MD3 to check the accuracy of the returns that I prepare. Last season I tried 1040 PLUS, a tax preparation package offered by TCAA of Scottsdale, AZ. I found it to be useful, though only up to a point.

1040 PLUS will prepare Form 1040 and twenty-two other forms and schedules. (See Figure 1.) I purchased only those forms that I usually use for at least ten clients a year. However, though this was just a small selection, it seemed to be representative of the package as a whole.

1040	Form 2106	Schedule F	Form 4562
Schedule A	Form 2119	Schedule G	Form 4797
Schedule B	Form 2210	Schedule R	Form 4972
Schedule C	Form 2441	Schedule SE	Form 5695
Schedule D	Form 3468	Schedule W	Form 6251
Schedule E	Form 3903		Form 6252

Figure 1

On the positive side, 1040 plus comes with a 128-page manual that is clear and helpful. The user begins by creating a tax preparer file (name, address, Social Security number, etc.) for each preparer. Before the program can be accessed, the number assigned to the current user must be entered. This can be a nuisance, though of course it is a safeguard that some firms will appreciate. An opening menu is provided to direct the preparer from one operation to another, and the user is instructed line by line as to the type of data to be entered. The 1040 module includes a header unit that prompts the operator to enter the name of the taxpayer along with his or her classification and dependents. The data from the completed supplementary schedules is included on Form 1040 by the software design. After the proper information has been entered, 1040 PLUS computes the tax owed or refund due and then prints out the complete return on regular IRS forms.

Although this sounds straightforward enough, the program is awkward in certain respects. For example, it asks for grand totals of various types, but it will not assist in compiling taxpayer records into the grand totals. Also, the "Wages Earned" prompt continues to call for more wages several times after they have all been entered. A potentially more serious problem occurs when an error is made in data entry, since it cannot be immediately corrected. To correct a mistake the operator must complete that subsection and then reply "No" when asked if everything is correct. Then that entire section is repeated and everything must be re-entered.

In addition, a flag must be typed in at the Form 1040 line where computations from other forms will be entered. When the program finishes the Form 1040 module it asks if anything has been forgotten, thereby permitting access to the other forms. Form 1040 must be printed by the printer before the opening menu can be accessed again and before it is possible to exit from the program. For a hard copy of the return, standard IRS forms must be aligned in the printer one page at a time in a very precise manner.

For these and other reasons, I used this program less and less last season. My original goal was to use it to check the accuracy of my returns, but it only partially met this need. It doesn't check the accuracy of your math prior to entering the totals on the forms. A pretty typed return to present to a client is of limited value if a mistake has been overlooked. My feeling is that 1040 PLUS would be best used by a business with several preparers and with enough clients to justify buying the complete package.

Joe Day, Jr. has his own tax-bookkeeping business in Greenville, Texas. He uses SuperCalc to compile workpapers for the more complicated client returns.

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The following are full disks of software assembled specifically for Morrow CP/M 2.2 systems (some will not run under CP/M 3.0). Each program has a .DOC (documentation) file and many include source.

Morrow Disk M1
Modem software

This disk is absolutely priceless if you will be using a modem to communicate with bulletin boards, other micros or mainframes.

MMODEM: Morrow version of MODEM 795. You can change your baud rate inside the program. Includes source and library so you can customize it if you wish.

SMODEM: This is MODEM 7 setup for SMARTMODEM compatible modems. Handles autodial and autoanswer.

SQ/USQ: Programs to squeeze and unsqueeze files for faster transfer.

Morrow Disk M2
Utilities

Really oodles of spiffy little (and big) programs to help you get full use of your Morrow.

ZZSOURCE.COM: A true Zilog format disassembler for 8080 and Z80 object (.COM) files. Now you can turn .COM files into .MAC files.

UNERA.COM: Simply enter "UNERA" followed by the name of the file you just erased and presto, the erased file is back! A lifesaver.

FINDBD54.COM: Checks an entire disk, reports bad sectors, and then creates a special file containing those sectors. You save a bundle on disks.

CAT2: This is a group of programs which create and maintain a single directory of all the programs you have on all your disks. Even keeps track of which programs are backed up and which aren't.

DUMPX, DU-77, COMPARE, FORMFEED,DIRDUMP, ... and all have documentation on disk.

Morrow Disk M3
Games

PACMAN.COM: Despite the Morrow's lack of graphics, this one looks and plays amazingly like the real thing! Keep it hidden.

ZCHESS.COM: Chess with a 1-6 level look ahead.

OTHELLO.COM: You learn it in minutes, master it in years.

BIO.COM: Generates custom graphic biorhythm.

MM.COM: Master Mind.

WUMPUS.COM: This is the famous 550 point super version of Adventure. There isn't room on one disk for this program and all the data files (the cave is huge) so the data files are on Disk M4.

Morrow Disk M4
Adventure Data & Aliens

ADVT.DAT: This disk contains the data files for the 550 point Adventure (the latest, greatest, most cussed version ever devised by half-mortals). You must have both M3 and M4 to play Adventure.

ALIENS: This is the game that made arcades famous. Keep this one hidden from the younger set or you won't get to play Adventure.

Morrow Disk M5
MX-80 Graphics

A complete Epson MX-80 graphics printer package including example files. Same as M6 except for MX-80 (or compatible) printers.

Morrow Disk M6
Prowriter Graphics

This is a complete Prowriter printer graphics package written by the same Micro C subscriber who wrote the MX-80 graphics package. Plot points, lines, circles, boxes, and more. Examples, documentation, and more.

Morrow Disk M7
Small C Version 2 Compiler

This is a greatly extended version of Ron Cain's Small C compiler. Version 2 has more expressions and larger library, true subset of Unix C. Disk contains compiler, documentation, and library — everything you need.

Morrow Disk M8
Small C Version 2 Source

This disk contains the source (written in Small C) of the Small C version 2 compiler. Get M8 if you want to try extending the compiler. (You must have M7.)

Morrow Disk M9
ZCPR

ZCPR: The big news on this disk is the self-installing version ZCPR available only from Micro C. Once you have ZCPR in your CP/M, you'll never go back to straight CP/M! For instance, ZCPR searches drive A for any program not found on drive B, so, even an empty disk in drive B appears to contain every program on A. It's great for text editors, compilers, etc. Plus many more new features to make CP/M easier to live with. In fact, Digital Research incorporated many features of ZCPR into CP/M 3.0

EX14: a super replacement for SUBMIT.

Morrow Disk M10
Assemblers

We've received a lot of requests for a Z80 assembler. So Dana put in some long hours getting the Crowe Z80 assembler to run on the Morrow (and every other Z80 machine).

CROWECPM: This is a first class Z80 assembler. We use this assembler daily (and we included its source). Takes standard Zilog mnemonies.

LASM: This is a more powerful version of the ASM assembler you received with the Morrow. This will link multiple programs together at assembly time.

PRINTPRN: This program makes it easy to print the listing files generated by the Crowe assembler.

Morrow Disk M11
Library & Checkbook Programs

CHECKS: This has been a very popular group of programs. Categorizes checks so you can keep track which are tax deductible and which get charged to which projects. Includes source and excellent example check files. Very powerful.

LIBR: This is a complete set of library routines which let you group files into a single file called a library. Then CP/M sees them as a single program, but with the library routines, you can list them out separately, run them separately, or divide them up again. Almost like a unix environment.

Morrow Disk M12
Pascal Compiler

This is a real Pascal compiler. It supports only a subset of the language (no records, pointers, Booleans, reals or complex) but it generates a real .COM file. Everything is on this disk: the compiler, its source, example programs and documentations.

Morrow Disk M13
Z80 Tools

This is for those of you who are into Z80 assembly language.

XLATE.COM: A very good 8080 to Z80 translation routine.

DASM.COM: An easier to use version of ZZSOURCE (the Z80 disassembler). This full disk includes source and documentation for both routines.

Morrow Disk M14
Z80 Macro Assembler

This is a real Z80 macro assembler! Syntax, closely follows RMACK and MAC. Also includes pseudo ops to support conditional assembly, etc. No phase or relocatable code.

Morrow Disk M15
Turbo Pascal Games I

We've combined eleven games on this disk using Turbo Pascal's "chain" procedure. Play BACCARAT, BLACKJACK, HORSERACE, KENO, and more without losing a penny. Source is included for all games.

Morrow Disk M16
Turbo Pascal Games II

A variation of Yahtzee, a planetary lander game, a Wumpus hunt, a version of Life, and much more to keep you glued to your keyboard. Like M15, this disk uses the "chain" procedure of Turbo Pascal to combine the twelve games. All programs include source.

Morrow Disk M17
Turbo Pascal Games III

If you like Turbo as much as we do and want to see more involved program examples, this is the disk for you.

CRIBBAGE: the time honored card game.

DBLICK-V: a great version of Breakout, even without graphics.

ELIZA: converse with your computer. Everything you need to create it's own perverse personality.

GERMS: two types of germs battle it out in this version of Life.

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UPCOMING THEMES

The contents noted here are not articles already written--they are suggestions we hope you will take as inspiration to write. Of course, material of general interest is also always welcome. **NOTE:** The previously announced sequence of themes has been changed.

APR/MAY 86 **Tools for Writers, Academics and Desktop Publishers**
This issue is virtually chock-full already, but if you have an irresistably great article or idea or a program you know we all need that you want to review, please call Shoshana (the Guest Editor on this issue) immediately at (415)644-2638.

JUN/JULY 86 **Upgrades and Enhancements**
An issue dedicated to commercially available and homemade enhancements for your Morrow workhorse to make it more powerful--hard disk add-on's for floppy and hard disk MD's, co-processors, RAM disks, networks, extra serial ports.... Have you custom-designed software to enhance your Morrow? All proposals for this issue are needed by March 7.

AUG/SEP 86 **Repairs and Maintenance**
A vital concern for Morrow owners nowdays. Write and let us know where you go for repairs. Where do you get spare parts? How to do simple repairs and maintenance yourself. How to make good use of the MOR Manuals. How to deal with consultants.

OCT/NOV 86 **Educational Software**
Programming languages to write your own, instructional programs for toddlers to techies, the role of computers in education.... If you know about them, write about them. Know of any good CP/M educational software you'd like to review?

ALL WRITERS NOTE: If you are interested in writing for MOR, submit a proposal of one to two paragraphs, indicating how you will approach your topic, and your related experience.

If you are interested in reviewing software, indicate the need or concept addressed by the program and how you will approach assessing how the program meets that objective. If available, please include a sample of your (published or unpublished) writing. Please follow the **Writers' Guidelines** on page 1. Direct your correspondence about articles Attn: Managing Editor. Published ms. of 1000-word minimum earn the author a one-year subscription to MOR.

EVERYONE is most welcome to contribute programs to the Floppy of the Bi-Month (FLOB) for all these issues. One cannot live by the printed word alone! Send Attn: Editor.

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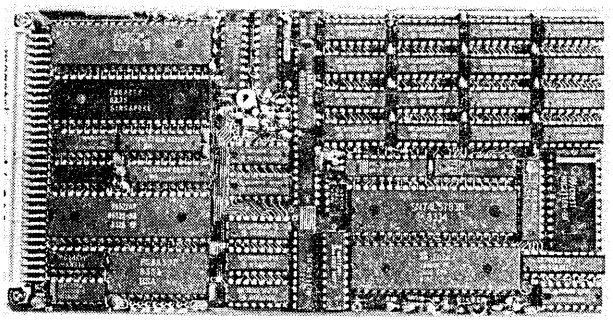

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MOR PUBLIC DOMAIN DISKETTES

by Sypko Andreae

This time we offer six (6!) Floppies of the Bi-Month (FLOB's). We made a careful selection of the Public Domain software discussed in this issue. This is only the tip of the PD iceberg.

To save space many files are not only squeezed (unsqueeze with NSWEEP) but are also gathered in .LBR (library) files, to be unraveled by NULU. NSWP207 is on FLOB/AUG85 #1, NULU is on FLOB/OCT85 #1.

The communications programs on FLOB/FEB86 Disks #3, #4, #5 are the major modem programs available today. They are mentioned in several of this issue's articles. In these library files, you'll find .COM files for MD2, MD3 and MD11. Note: They are different for each one! They are provided ready to run and are supplied with operational documentation. There are no overlay or .ASM files in these libraries, so you won't have all the files needed to modify these .COM files.

AGAIN: PLEASE DO NOT SEND ANY MORE FLOPPIES!!

Instead, use the order form on this page and include a check for the total amount ordered ($8.00 per floppy). MOR now provides floppies, mailers and postage. All floppies are single-sided format, so everybody can read them.

FLOB/FEB86: Public Domain Software
All page references are to Vol. 3, #1, Feb/March 86

FLOB/FEB86 DISK #1		
ADVENT	.LBR	See p. 19: ADVENTURE game
BISHOW	.COM	Bi-directional File display - see p. 9
BISHOW	.DOC	Documentation for the above
M300DIAL	.BAS	Dial voice calls with MM300 - see p. 37
M300DIAL	.DOC	Documentation for the above
SUPRDIR	.LBR	SD (Superdirectory) - see p. 9
YANC	.LBR	Diskette catalog program - see p. 10
FLOB/FEB86 DISK #2		
BASGAMES	.LBR	MBASIC games, see article starting p. 19
COMGAMES	.LBR	Other games, see article starting p. 19
FLOB/FEB86 DISK #3		
MDM7-MD	.LBR	MDM730 modem programs for MD2,3 and MD11
PDSE068A	.LQT	A listing of known RCP/M's as of Nov '85
FLOB/FEB86 DISK #4		
MEX-MD	.LBR	MEX modem programs for MD2,3 and MD11
FLOB/FEB86 DISK #5		
IMP-MD	.LBR	IMP modem programs for MD2,3 and MD11
KERMITMD	.LBR	MKERMIT modem programs for MD2,3 + MD11
FLOB/FEB86 DISK #6		
ADV550	.LBR	Expanded ADVENTURE game. See article starting at p. 21 (550 point version)

MOR SUBJECT INDEX

by Michael Crew

The following is a listing of subjects covered in all 1984-85 MOR articles, columns and Letters to the Editor. The references cover all MOR issues from Vol. 1, #1 through Vol. 2, #6. In the numerical references:

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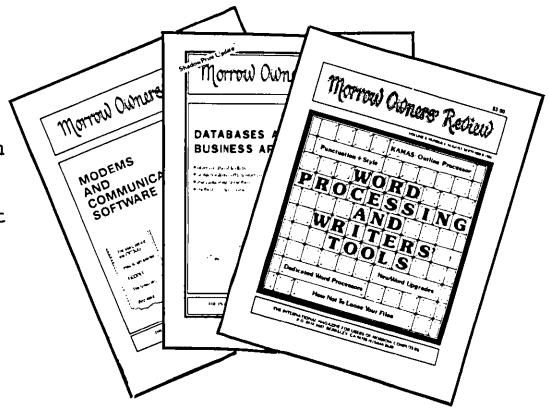

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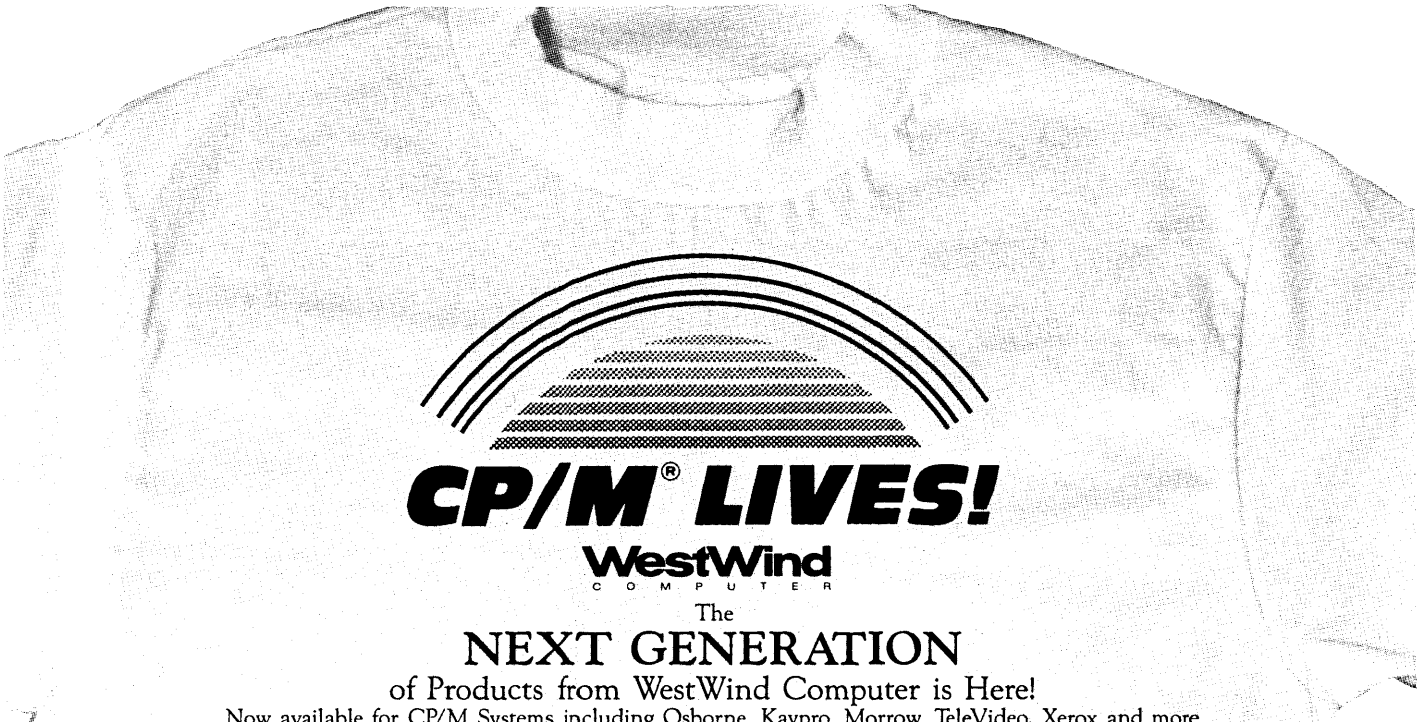

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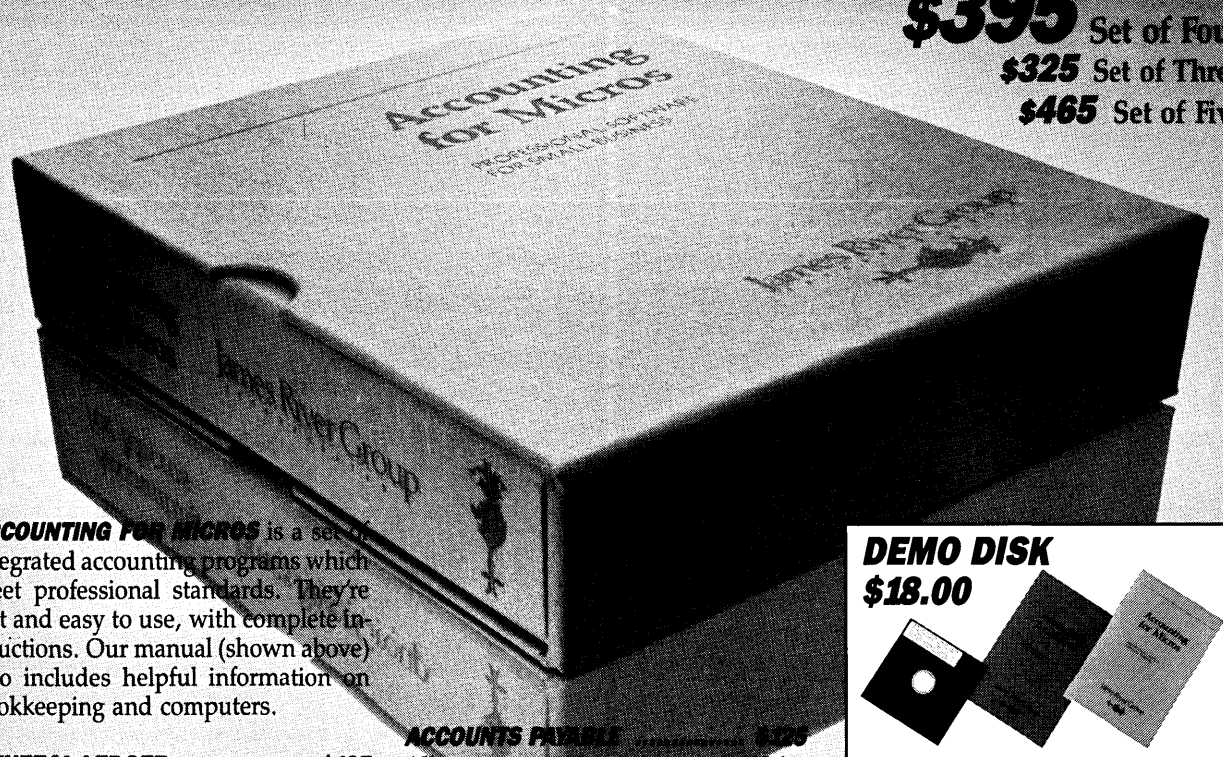

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